



COUNTY OF ROANOKE

FINANCE DEPARTMENT

PURCHASING DIVISION

Kari Sutphin
Buyer

P.O. Box 29800
5204 Bernard Drive SW, Suite 300F
Roanoke, VA 24018
Phone: (540) 283-8151
ksutphin@roanokecountyva.gov

INVITATION TO BID

#2018-064

REPAIR/MAINTAIN SEVERAL BIORETENTION FACILITIES
for
COUNTY OF ROANOKE

Sealed Bids Due:

February 16, 2018
2:00 PM
(Local Prevailing Time)
One (1) Original
Three (3) Complete Copies
One (1) Electronic Copy

IFB # 2018-064 Repair/Maintain Bioretention Facilities

GENERAL INFORMATION

Roanoke County owns and operates multiple stormwater management best management practices (BMPs), including bioretention facilities. The purpose of this solicitation is to obtain bids from qualified bidders to perform repairs/maintenance on bioretention facilities located at the Roanoke County Fleet Service Center and at the Glenvar Library. See the attached site maps for BMP locations, and excerpted pages from the original construction drawings for information.

Roanoke County is soliciting bids from prospective Contractors that have expressed an interest in the past to provide repair/maintenance services for BMPs. Interested and qualified bidders should submit their completed bid form and evidence of qualifications to County of Roanoke, Purchasing Division, Kari Sutphin, 5204 Bernard Dr, Suite 300F, Roanoke, VA 24018 or to ksutphin@roanokecountyva.gov no later than 2:00 pm on Friday, February 16, 2018.

SUBMISSION OF THE BID

One (1) Original, three (3) complete copies and, one (1) Electronic Copy (CD preferred), of the sealed bid will be accepted at and until **2:00 PM (local prevailing time) on Friday, February 16, 2018**, at County of Roanoke, Purchasing Division, Kari Sutphin, 5204 Bernard Dr, Suite 300F, Roanoke, VA 24018. As this is a sealed formal Invitation to Bid, faxed bids will NOT be accepted. Bids not received by the date and time listed above will be returned to the Offeror unopened. The bid package must be clearly marked with “**IFB #2018-064 REPAIR/MAINTAIN BIORETENTION FACILITIES.**”

It is not the intent of the specifications to be proprietary, nor to exclude any manufacturer or dealer. Deviations will be given consideration if they are considered to be suitable and acceptable for comparison. Any deviations must be submitted, in writing, with your bid. Deviations discovered after bid award or material receipt, not stated in your bid, shall be grounds for disqualification and nullification of order. It is the responsibility of the Offeror to prove that the deviation is equal to the product/service specified. The County of Roanoke will make the final determination as to whether the product is equivalent.

EVALUATION OF THE BID

The County of Roanoke shall provide the mechanism for the evaluation of all information received, the final determination of responsible Offerors, and reserves the right to waive informalities and irregularities and to accept or reject any or all bids. Roanoke County reserves the right to procure from State Contracts when it is in our opinion that the State Contract is in the best interest of Roanoke County. Roanoke County retains the right to split items to multiple suppliers.

Individuals with disabilities, who require assistance or special arrangements in order to participate in bidding, please contact us. We require that you provide at least 48 hours notice so that reasonable efforts may be made to provide the proper arrangements. You may be requested to specify the nature of any accommodation or assistance, which may be required for your participation.

FOR QUESTIONS REGARDING THE BID, PLEASE CONTACT:

Kari Sutphin, Buyer
5204 Bernard Dr., SW, Suite 300F
Roanoke, VA 24018
Telephone: 540-283-8151
Email: ksutphin@roanokecountyva.gov

SCOPE OF WORK:

All work shall conform with the Virginia DEQ Stormwater Design Specification No. 9, Bioretention that is located online at the Virginia Stormwater BMP Clearinghouse website. A DEQ Certified SWM Inspector or person holding a North Carolina Stormwater BMP Inspection and Maintenance Certification must be onsite overseeing the work whenever work is occurring.

1. Fleet Service Center: BMP designation FLEET1 (see attached site map)
 - Clear out and remove invasive underbrush from the site.
 - Remove and dispose of the top layer of soil/decomposed mulch off of the site.
 - Repair broken clean outs.
 - Fill groundhog holes with existing filter media that is available at the site.
 - Provide new surface mulch layer.
 - Prune existing vegetation to remain.
 - Provide written report of the BMP's condition and recommendations for an annual maintenance program.
2. Glenvar Library: BMP designation GLENLIB2 and GLENLIB3 (see attached site map)
 - Clear out and remove invasive underbrush from the site.
 - Remove and dispose of the top layer of soil/decomposed mulch off of the site.
 - Remove sediment from curb cut entrances to the BMP from the site.
 - Provide new surface mulch layer.
 - Prune existing vegetation to remain.
 - Provide written report of each BMP's condition and recommendations for an annual maintenance program.

SCHEDULE:

Perform all work within 45 days of purchase order issuance by the County of Roanoke.

SPECIFICATIONS

Roanoke County shall provide the mechanism for the evaluation of all information received, the final determination of responsible bidders, and reserves the right to waive informalities and/or irregularities and to accept or reject any or all proposals. The County reserves the right to split awards if it is in the best interest of the County.

COOPERATIVE PROCUREMENT

The procurement of goods and/or services provided for in this Invitation for Bid is being conducted pursuant to Virginia Code, Section 2.2-4304.

Therefore, the Offeror or Bidder is advised, and by submitting a response to this procurement, such Offeror or Bidder agrees that any resulting contract from this

procurement may in addition to the County of Roanoke, may also be extended to other public agencies or bodies in the Commonwealth of Virginia to permit those public agencies or bodies to purchase such goods and/or services at contract prices, in accordance with the terms, conditions, and specifications of this procurement. The successful Offeror or Bidder shall deal directly with each public agency or body seeking to obtain any goods and/or services pursuant to any contract that may result from this procurement and in accordance with Virginia Code, Section 2.2-4304.

The County of Roanoke shall not be responsible or liable for any costs, expenses, or any other matters of any type to either the successful Offeror or Bidder or the public agency or body seeking to obtain any goods and/or services pursuant to this cooperative procurement provision.

GENERAL TERMS, CONDITIONS, AND INSTRUCTIONS –IFB (Revised 04/2013)

READ CAREFULLY - FAILURE TO COMPLY WITH EACH AND EVERY PROVISION OF THIS INVITATION AND THE SPECIFICATIONS ARE GROUNDS TO DISQUALIFY A BIDDER

Wherever the term Roanoke County, County or Roanoke County Board of Supervisors is used it is understood to include the Roanoke County School Board, in addition, any contract awarded from this solicitation may be used by Roanoke County Public Schools and any other public entity for which the County of Roanoke acts as a fiscal or purchasing agent. Individuals with disabilities, who require assistance or special arrangements in order to participate in bidding, please contact (540) 772-2061. We require that you provide at least 48 hours' notice so that reasonable efforts may be made to provide the proper arrangements. You may be requested to specify the nature of any accommodations or assistance, which may be required for your participation.

SUBMISSION AND RECEIPT OF BIDS:

- (a) To be considered, all bids must be delivered in a sealed envelope, clearly marked with the words "BID DOCUMENTS", bid number and the name of the item being bid and received in the Roanoke County Finance Department/Purchasing Division no later than the specified date and time for the bid opening. Failure to timely submit such bid shall disqualify the bidder and such bid will be returned to the bidder unopened. NO FAXED BIDS WILL BE ACCEPTED.
- (b) Unless otherwise specified, bidders must use the invitation to bid form furnished by the County. Failure to do so shall be grounds for rejection of the bid.
- (c) Bids having any erasures or corrections must be initialed in ink by the bidder. An authorized officer of the company must sign bids in ink. Such authorization shall be a part of the bid document. All bids must either be typewritten or printed in ink.
- (d) The original copy of the bid must not be permanently bound and one (1) electronic copy is preferred.

IMPORTANT NOTICE EFFECTIVE 3/14/2011 - ADDENDUMS, BIDS, RFPs, TABULATIONS AND NOTICES OF AWARD:

Effective March 14, 2011, the Purchasing Division of Finance, in conjunction with the County of Roanoke, has a new and improved website. With this new website, Purchasing has gained a new bid module which will provide more information and faster downloads for the vendors interested in doing business with the County. There is a new advanced Email/Text Message notification system where vendors can sign up to receive emails or text message notices about bids, proposals, addendums, bid tabulation and awards. Vendors can sign up to receive notification in selected commodity/service categories. The current Vendor Registration to receive notices of bids and proposals will soon be phased out completely. All vendors interested in receiving these automatic electronic notifications will need to sign up in the new **"Notify Me"** and it is their responsibility to keep information current in the system in order to receive the notifications. The sign up only requires an email address and/or a cell phone number for receiving text messages (if your phone is capable) and your choice of categories. The address for this new website is www.RoanokeCountyVA.gov/purchasing.

Although **Notify Me** will be the only way to receive automatic notification, all BIDS/RFP Information will continue to be posted on our website, bulletin board, published in the local newspaper, and can be picked up at the Purchasing Division, 5204 Bernard Drive, Suite 300F, Roanoke, VA 24018. Phone # (540) 772-2061.

PRICES TO BE FIRM:

The bidder warrants, by virtue of bidding, that the prices, terms and conditions quoted in his bid will be firm for a period of 60 days from the date of the bid opening.
NET 30 after receipt of invoice. Price should include shipping.

INVOICES:

The contractor must send all invoices directly to the payment address shown on the purchase order/contract and must submit invoices for items ordered, delivered and accepted by Roanoke County. All invoices must show the purchase order/contract number. All contractors need to be properly registered as a payment vendor for the County in order to receive payment. All vendors previously registered are still in the system as a payment vendor. This system will no longer be used for notification of bids/RFPs.

PERFORMANCE BOND:

At the time of or prior to the execution of the contract, the County reserves the right to require the bidder or contractor to furnish a performance and/or labor and material payment bond with corporate surety, satisfactory to the County of Roanoke, in the amount of the contract price.

DELIVERY POINT:

Unless otherwise indicated, all items shall be delivered F.O.B. with destination and delivery charges included in the bid price. F.O.B. destination is interpreted to mean unloading and placing in the building or area as directed by the County.

CASH DISCOUNTS:

In determining the award of a bid, cash discounts for prompt payment will be considered. Discount time period computation shall commence from and after complete delivery, in

satisfactory condition, and receipt of a properly documented invoice.

BRAND NAMES:

When a brand name appears in the specifications, it is solely for the purpose of establishing a grade or quality of material. The County does not wish to rule out other brands or manufacturers; therefore, the words "EQUIVALENT TO" are automatically included. However, if a product other than that specified is bid, it is the vendor's responsibility to prove to the County that said product is equivalent to that specified in the bid.

QUALITY:

All materials used for the manufacture or construction of any supplies, materials, or equipment covered by this bid shall be of the best quality available.

ACCEPTANCE OF MATERIAL:

Until such time as all the conditions in the contract are fulfilled, the County reserves the right to refuse and return material, at the seller's expense.

WARRANTY/RETURNS:

Clearly specify your warranty of product and handling of returns, including turnaround time on faulty equipment. Warranties and other technical data are to be included.

DELIVERY:

Time is of the essence for delivery of any items, products or service procured as a result of this bid. If delivery is not made at the time specified on the Invitation to Bid form, the County reserves the right to call in any and all bonds or other security given for performance, to cancel the order, or any part thereof, without obligation, to declare the seller in default, and to disqualify the seller from bidding on future County contracts.

DEFAULT PROVISION:

In case of default by the contractor, the County shall have the sole discretion to procure the articles or services from other sources. The defaulting contractor shall be liable for any and all costs in excess of the contract price occasioned by or resulting from such default whether directly or indirectly, which sums may be paid or credited from any forfeited bond or other security.

PRICING:

In the event of discrepancy between the total pricing and unit prices, the County in its sole discretion, shall determine the bid price.

Negotiation with lowest responsible Bidder: The County of Roanoke reserves the right to negotiate with the lowest responsible bidder if the low bid exceeds available funds. This provision will be used in accordance with County Code Chapter 17 (Ord. No. 3350, S2-30, 12-14-82). State Code 2.2.4318.

COPYRIGHTS OR PATENT RIGHTS:

The bidder warrants that there have been no violations of copyrights or patent rights in the manufacture, production or sale of the goods shipped or ordered as a result of this bid. The bidder agrees that the County of Roanoke shall be indemnified and held harmless from any and all liability or expense occasioned by any such violations.

FEES INCLUDED IN BID PRICE:

Submitted bids shall include in the price, the cost of any Business and/or Professional licenses, permits or fees as required by law.

TAX EXEMPTION:

The County of Roanoke is exempt from any taxes imposed by State and/or Federal Government. Upon notification, the County will furnish a certificate of tax exemption.

CERTIFICATION AND ABILITY:

The County of Roanoke reserves the right to request from the bidder, a separate manufacturer's certification of all statements made in the bid. The County may request any or all bidders to furnish proof of experience, ability and financial standing.

SIGNED BID CONSIDERED AN OFFER:

THIS INVITATION TO BID MUST BE SIGNED AS HEREIN PROVIDED. Submission of this signed invitation shall be considered an offer by the bidder or contractor to sell the items or services as required in the specifications. All bids are subject to approval by the County Board of Supervisors. In the case of default by the bidder or contractor after acceptance of a bid, the County of Roanoke may take such action, as it deems appropriate, including forfeiture of any and all bonds or other security and legal action for damages or specific performance.

NO BID:

To insure that your name remains on our bid listing, should you desire not to bid on a particular project, return the completed bid package marked with the words "NO BID". Failure to return to the County a bid or "NO BID" may cause your name to be removed from our listing.

COMPLIANCE WITH LAWS:

The bidder is responsible for compliance with all Local, State and/or Federal laws and regulations. The County of Roanoke shall be held harmless from any liability.

AUTHORITY TO TRANSACT BUSINESS IN VIRGINIA:

A Contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law. Any business entity described herein that enters into a Contract with the County pursuant to the Virginia Public Procurement Act 2.2-4300 et seq. shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50 of the Code of Virginia, to be revoked or cancelled at any time during the term of the Contract. The County may void any Contract with a business entity if the business entity fails to remain in compliance with the provisions of this section. All corporations, LLC's and LLP's shall be registered with the State Corporation Commission. To determine whether your firm should register, please contact the SCC.

By my signature on this solicitation, I certify compliance with federal, state, and local laws

and regulations applicable to the performance of the services described herein.

ACCEPTANCE OR REJECTION OF BIDS:

The County of Roanoke reserves the right to accept or reject any or all bids/offers. The County also reserves the right to award the contract for any such materials, goods or services the County deems will best serve its interests. It further reserves the right to award the contract on a split order basis, lump sum or individual basis, or such combinations as shall best serve the interest of the County. Roanoke County reserves the right to make a site visit to the facility prior to bid award.

EVALUATION CRITERIA:

Several factors, in addition to costs, will be taken into account when evaluating bids:

Roanoke County shall provide the mechanism for the evaluation of all information received, the final determination of responsible Offerors, and reserves the right to waive informalities and to accept or reject any or all bids.

- (a) Company background, staffing and experience: The character, integrity, reputation, judgment, experience and efficiency of the bidder.
- (b) References: Provide five (5) references with contact names, companies and phone numbers. These references must be for firms who have purchased the same types of products and/or services.
- (c) The quality of performance of previous contracts, products and/or services.
- (d) Reporting capabilities.
- (e) Company financial status: The sufficiency of the financial resources and the ability of the bidder to perform the contract.
- (f) Bid Submission completeness and compliance with the specifications.
- (g) Service and support offering. The ability, capacity and skill of the bidder to perform or provide the service. The ability of the bidder to provide future maintenance and/or service.
- (h) Price. Pricing shall be a factor in evaluating the bids; however, Roanoke County reserves the right to purchase other than low bid.
- (i) The previous and existing compliance by the bidder with laws and policies relating to the contract.
- (j) The quality, availability and adaptability of the goods and services.
- (k) All samples are subject to product testing.
- (l) Whether the bidder can perform the contract and provide service promptly.
- (m) The ability of the bidder to respond to problems and concerns.
- (n) Delivery

RULING LAW:

This invitation to bid and any contract executed pursuant hereto of which this invitation shall be an internal part shall be governed, controlled and interpreted in accordance with the laws of the Commonwealth of Virginia without reference to its conflict of law principles. Each party to such contract shall thereby submit to the exclusive jurisdiction of the Circuit Court of the County of Roanoke or, in the event that jurisdiction is authorized, to the United States District Court for the Western District of Virginia, sitting at Roanoke, Virginia.

NONDISCRIMINATION PROVISIONS:

During the performance of this contract, the contractor will not discriminate against any employee or applicant for employment because of age, race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

INSURANCE

The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

Claims under workmen's compensation, disability benefit and other similar employee benefit acts; and

Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees; and

Claims for damages because of bodily injury, sickness liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

Claims for damages because of bodily injury, sickness, or disease, or death of any person other than his employees; and

Claims for damages because of injury in or destruction of tangible property, including loss of use resulting there from.

Certificates of insurance acceptable to the OWNER shall be filed with the OWNER prior to coverage's afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

The CONTRACTOR shall procure and maintain, at his own expense, during the

CONTRACT TIME, liability insurance as hereinafter specified:

CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damage sustained by two or more persons in any one accident.

The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the WORK is performed. Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any WORK is sublet, the CONTRACTOR shall require each SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous WORK under this CONTRACT at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

QUESTIONS REGARDING THE BID:

Questions should be directed to:

Kari Sutphin, Buyer
5204 Bernard Dr., SW, Suite 300F
Roanoke VA 24018
Telephone: 540-283-8151
Email: ksutphin@roanokecountyva.gov

SPECIAL INSTRUCTIONS:

ANTITRUST:

By entering into a contract, the bidder conveys, sells, assigns, and transfers to Roanoke County all rights, title, and interest in and to all causes of the action it may now or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by Roanoke County under said contract.

ASSIGNMENT OF CONTRACT:

A contract shall not be assignable by the contractor in whole or in part without the written consent of Roanoke County.

AVAILABILITY OF FUNDS:

It is understood and agreed between the parties herein that Roanoke County shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this contract.

IMMIGRATION REFORM AND CONTROL ACT OF 1986:

By signing this bid, the bidder certifies that the firm does not and will not during the performance of this contract employ illegal alien workers or otherwise violate the Federal Immigration Reform and Control Act of 1986.

ANTI-COLLUSION CERTIFICATION:

By my signature on the face of this bid, I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, equipment, or services, and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of the Virginia Governmental Frauds Act and Federal Law and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the bidder.

KICKBACKS:

I certify and warrant that by my signature on this solicitation, neither I nor the bidder for whom I am authorized to act has offered or received any kickback from any other bidder, supplier, manufacturer, or subcontractor in connection with bid on this contract, subcontractor in order, in the form of any payment, loan, subscription, advance, deposit of money, services or anything, present or promised, unless consideration of substantially equal or greater value is exchanged. Further, no person shall demand or receive any payment, loan, subscription, advance, deposit of money, service, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is exchanged.

DEBARMENT:

By my signature on this solicitation, I certify that this person/firm/corporation is not currently barred from bidding on contracts by any agency of the Commonwealth of Virginia or the federal government of the United States of America, nor is this person/firm/corporation a part of any firm/corporation that is currently barred from bidding on contracts by any agency of the Commonwealth of Virginia or the federal government of the United States of America. I have attached an explanation of the previous debarment(s) and copies of notice(s) of reinstatement(s).

INDEMNIFICATION:

To the fullest extent permitted by law, the Vendor shall indemnify and hold harmless the County of Roanoke and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to, attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting there from,

and (2) is caused in whole or in part by any negligent act or omission of the Vendor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph.

The County cannot legally agree to any clause indemnifying the contractor from any damages arising out of the contract or holding the contractor harmless. The submission of a bid or proposal means that the contractor agrees not to request such language in the resulting contract.

CONTRACT:

Any contract resulting from his bid shall consist of the following documents: the General Terms and Conditions and the Specifications, both of which are contained in the Invitation for Bid, together with the bidders response, which consists of this document, the Price Schedule and other bid documents attached hereto or submitted with this document.

DRUG-FREE WORKPLACE:

During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in violation of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

DATA ON CONVICTIONS FOR CERTAIN CRIMES AND CHILD ABUSE AND NEGLECT:

The contractor certifies that none of the persons who will provide services on school property or requiring direct contact with students has been convicted of any of the following felony or misdemeanor offenses: felony sex or violence offenses, other felony offenses or misdemeanor sex offenses within the past ten years.

The contractor further understands and acknowledges (1) that if he makes a materially false statement regarding any of the above offenses, he will be guilty of a Class 1 misdemeanor and may forfeit profits derived from the contract. Further, the contractor understands and acknowledges that before any person is permitted to provide such services subsequent to this certification, he must complete a new certification regarding such person in a form satisfactory to the School Board. The required certification form is attached hereto.

PROPRIETARY INFORMATION:

Ownership of all data, materials, and documentation originated and prepared for the County of Roanoke pursuant to the INVITATION FOR BID shall belong exclusively to the County and be subject to public inspection in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by a bidder shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the bidder must invoke the protections of Section 2.2-4342F of the Code of Virginia, in writing, either before or at the time the data or other material is submitted.

The bidder must specifically identify the data or materials to be protected and state the reasons why protection is necessary on the "Notice of Proprietary Information Form" below. In addition, the proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining in the Bid and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information.

The classification of an entire bid document, line item prices, and/or total bid prices as proprietary or trade secrets is not acceptable and may result in rejection of the bid.

DATA ON CONVICTIONS FOR CERTAIN CRIMES AND CHILD ABUSE AND NEGLECT
CERTIFICATION OF CONTRACTOR

Full Name of Contractor: _____

Description of Contract: _____

As required by Section 22.1-296.1 of the Code of Virginia, the undersigned hereby certifies that none of the persons who will provide services requiring direct contact with students on school property during school hours or during school-sponsored activities has been convicted of a felony or any offense involving the sexual molestation, physical or sexual abuse or rape of a child.

I further understand and acknowledge (1) that if I make a materially false statement regarding any of the above offenses, I will be guilty of a Class 1 misdemeanor and (2) that before any person is permitted to provide such services subsequent to this certification, I must complete a new certification regarding such person.

Date: _____

Name of Contractor

By: _____

TITLE

NOTICE OF PROPRIETARY INFORMATION FORM
IFB # 2018-064 REPAIR/MAINTAIN BIORETENSION FACILITIES

Confidentiality References Protection in Accordance with the Code of Virginia, Section 2.2-4342

Section Title	Page #	Reason(s) for Withholding from Disclosure

INSTRUCTIONS: Identify the data or other materials to be protected and state the reasons by using the codes listed below. Indicate the specific words, figures, or paragraphs that constitute trade secrets or proprietary materials. The classification of an entire bid or proposal document, line item prices, and/or total bid or proposal prices as proprietary or trade secret is not acceptable and will result in rejection of the bid or proposal.

- A) This page contains information relating to "trade secrets", and "proprietary information" including processes. Operations, style of work, or apparatus. Identify confidential statistical data. Amount or source of any income...of any person (or) partnership. See Virginia Public Procurement Act. Section 2.2-4342. Unauthorized disclosure of such information would violate the Trade Secrets Act 18 U.S.C. 1905.
- B) This page contains proprietary information including confidential, commercial or financial information, which was provided to the Government on a voluntary basis and is of the type that would not customarily release to the public. See Virginia Public Procurement Act, Section 2.2-4342; 5 U.S.C. 552 (b) (4); 12 C.F.R. 309.5(c) (4).
- C) This page contains proprietary information including confidential, commercial or financial information. The disclosure of such information would cause substantial harm to competitive position and impair the Government's ability to obtain necessary information from contractors in the future. 5 U.S.C. See Virginia Public Procurement Act. Section 2.2-4342; 552 (b) (4)12 C.F.R. 309.5(c) (4).

BID FORM
IFB # 2018-064 REPAIR/MAINTAIN BIORETENSION FACILITIES

NOTE: All pages of the Bid Form are to be included in the completed bid. Also, Bids containing any conditions, omissions, unexplained erasures, alterations or items not called for in the Bid, or irregularities of any kind, may be rejected by the County as being non-responsive. No changes are to be made to the Bid Form. Any changes to a bid must be initialed by the authorized person signing the Bid Form. The undersigned hereby proposes and agrees, if this bid is accepted by the County of Roanoke, to enter into a Contract with the County of Roanoke, Virginia to furnish all equipment, materials, labor and services necessary to repair and maintain several Bioretention Facilities, in accordance with this Invitation for Bid # 2018-064

Name of Company:_____

Contact Person:_____

Address:_____

Telephone Number:_____

E-Mail Address:_____

Name of DEQ Certified SWM Inspector or person holding North Carolina Stormwater BMP Inspection and Maintenance Certification :_____

Certification Number:_____

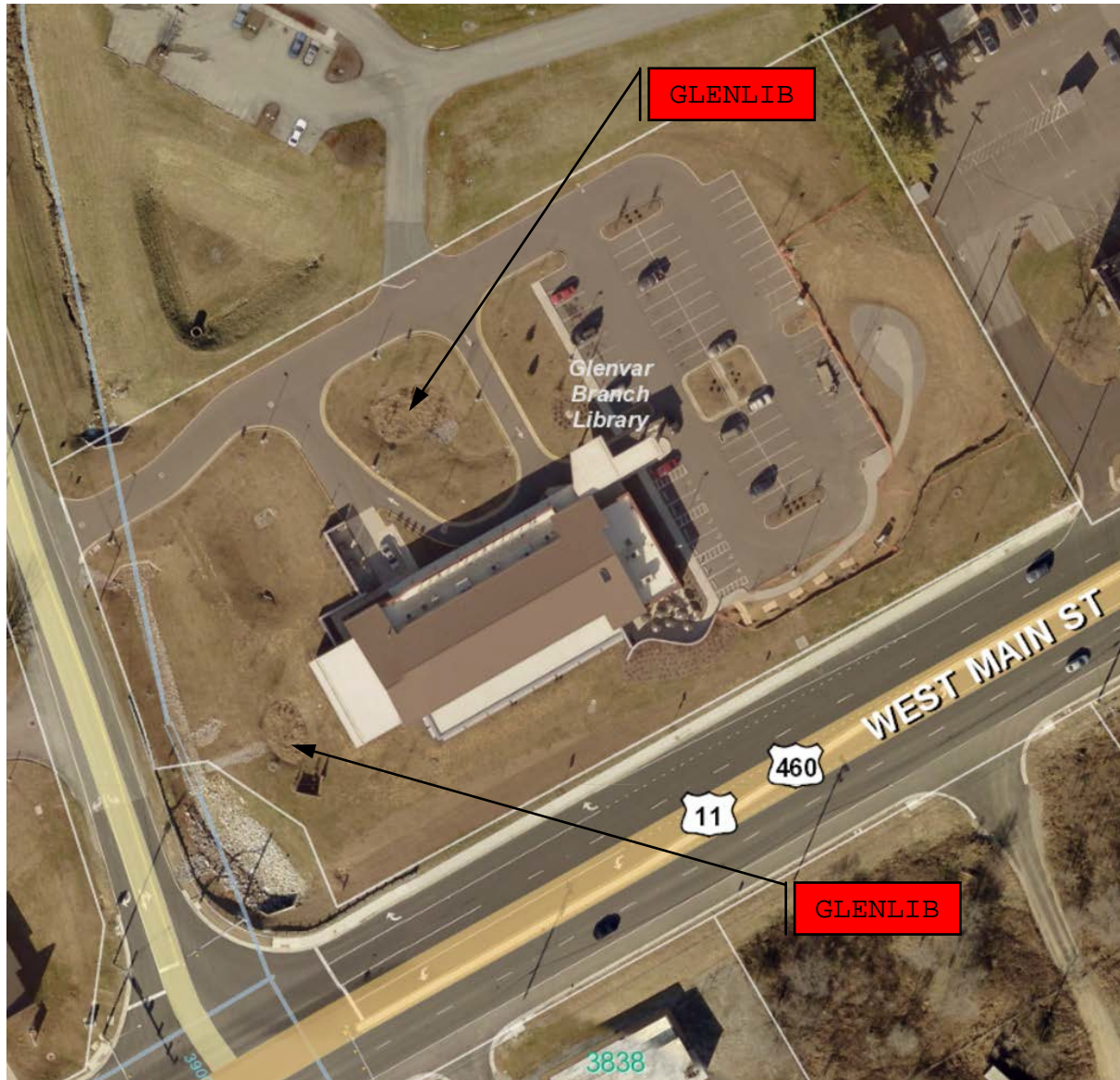
Include evidence that bidder has performed similar work on at least 3 bioretention facilities (1,000 square feet in size or larger) over the past 3-years. Provide a minimum of 3 references with project description (including size), location, owner's name, contract person's name and title, contact telephone number, and e-mail address.

Site Name	BMP Designation	Bid Price (Lump Sum)
Fleet Service Center	FLEET1	
Glenvar Library	GLENLIB2	
Glenvar Library	GLENLIB3	
TOTAL		

Fleet Service Center
5235 Hollins Road
Roanoke, VA 24019



Glenvar Branch Library
3917 Daugherty Road
Salem, VA 24153



SIGNATURE PAGE

IFB # 2018-064 REPAIR/MAINTAIN BIORETENSION FACILITIES

The County of Roanoke invites qualified Bidders to submit a bid. The County will review each bid and may elect to issue separate awards to the lowest responsive and responsible Bidders for such items on a per site basis or any combination thereof that might be in the best interest of the County. A Bidder may submit a bid for one or more or all locations listed on the Bid Form. The County of Roanoke invites any qualified Bidder to respond to this IFB by submitting a Bid for such work, service, and/or items consistent with the terms and conditions herein set forth. My signature certifies that the bid as submitted complies with all Terms and Conditions as set forth in IFB # 2018-064.

My signature also certifies that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under Title 18.2, Chapter 12, Article 1.1 of the *Code of Virginia*, 1950 as amended. Furthermore, I understand that fraud and unlawful collusion are crimes under the Virginia Governmental Frauds Act, the Virginia Government Bid Rigging Act, and Virginia Antitrust Act and Federal Law, and can result in fines, prison sentences, and civil damage awards.

My signature also certifies that this firm has no business or personal relationships with any other companies or persons that could be considered as a conflict of interest or potential conflict of interest to the County of Roanoke, and that there are no principals, officers, agents, employees, or representatives of this firm that have any business or personal relationships with any other companies or persons that could be considered as a conflict of interest or a potential conflict of interest to the County of Roanoke, pertaining to any and all work or services to be performed as a result of this request and any resulting contract with the County of Roanoke.

I hereby certify that I am authorized to sign as a Representative for the Firm:

Firm Name _____

Address _____

FEIN _____ PHONE _____

FAX _____ EMAIL _____

VA Contractor License # (if applicable) _____

State Corporation Commission # _____

Roanoke County Business License # _____

Authorized Signature _____

Name/Title (please type or print) _____

ATTACHMENT A TO
IFB # 2018-064 REPAIR/MAINTAIN BIORETENSION FACILITIES
GENERAL & SUPPLEMENTAL GENERAL CONDITIONS

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GENERAL CONDITIONS

1. DEFINITIONS

- 1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicate which shall be applicable to both the singular and plural thereof:
- 1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement, which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS, and SPECIFICATIONS, by additions, clarifications or corrections.
- 1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.
- 1.4 BIDDER - Any person, firm, or corporation submitting a BID for the WORK.
- 1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.
- 1.6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion, or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.
- 1.7 CONTRACT DOCUMENTS - The contract, including Advertisement for Bids, Information for Bidders, General Conditions, Supplemental General Conditions, BID, Technical Specifications and Special Conditions, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.
- 1.8 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.
- 1.9 CONTRACT TIME - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.
- 1.10 CONTRACTOR - The persons, firm, or corporation with whom the OWNER has executed the Agreement.
- 1.11 DRAWINGS - The part of the CONTRACT DOCUMENTS, which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.
- 1.12 ENGINEER - The Roanoke County Engineer or person, firm, or corporation designated by the OWNER to supervise the WORK and/or administer the CONTRACT DOCUMENTS.

- 1.13 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- 1.14 FINAL COMPLETION - The date as certified by the ENGINEER that the WORK has been completed in accordance with the CONTRACT DOCUMENTS and that final payment can be made. FINAL COMPLETIONS includes: 1) submission of Operation & Maintenance Manuals and 2) Record Documents and 3) completion of all punch list items.
- 1.15 NOTICE OF AWARD - The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.
- 1.16 NOTICE TO PROCEED - Written communication issued by the OWNER or authorized agent to the CONTRACTOR authorizing the Contractor to proceed with the WORK and establishing the date of commencement of the WORK.
- 1.17 OWNER - The Board of County Supervisors for Roanoke County, Virginia, or their authorized agent.
- 1.18 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.19 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the OWNER who is assigned to the project site or any part thereof.
- 1.20 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules, and other data, which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER, or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.
- 1.21 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- 1.22 SUBCONTRACTOR - An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- 1.23 SUBSTANTIAL COMPLETION - That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended. SUBSTANTIAL COMPLETION includes: 1) a Certificate of Occupancy from the Building Official / Authority Having Jurisdiction, 2) delivery of extra stock materials, 3) OWNER training & demonstrations, 4) submittal of CONTRACTOR's internal punch list with identification of incomplete items.

- 1.24 SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions required for the PROJECT, or such requirements that may be imposed by applicable state laws, or required to clarify or amplify the General Conditions.
- 1.25 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.
- 1.26 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.
- 1.27 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the Project. Email notification is an acceptable form of WRITTEN NOTICE.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

- 2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.
- 2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. SCHEDULES, REPORTS, AND RECORDS.

- 3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedule, payrolls, reports, estimates, records, and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.
- 3.2 Prior to beginning work the CONTRACTOR shall submit a construction progress schedules showing the order in which the CONTRACTOR proposes to carry out the WORK, including dates at which the CONTRACTOR will start the various parts of the WORK, estimated date of completion of each part, and, as applicable:
 - 3.2.1 The dates at which special detail drawings will be required; and
 - 3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.
 - 3.2.3 For projects exceeding 90 days the CONTRACTOR shall submit a cost loaded Critical Path Method (CPM) schedule. The cost loaded CPM schedule shall be updated and submitted on a

monthly basis in conjunction with the CONTRACTOR's payment applications.

- 3.3 CONTRACTOR shall also submit a schedule of payments anticipated to be earned during course of WORK.

4. DRAWINGS AND SPECIFICATIONS

- 4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.
- 4.2 In case of conflict between DRAWINGS and SPECIFICATIONS, the most stringent shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.
- 4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the CONTRACTOR'S risk.

5. SHOP DRAWINGS

- 5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER. SHOP DRAWINGS, catalog cuts, samples, schedules, etc. shall be submitted for all materials and equipment. On initial submittals, three copies of each item shall be required. Once the review is complete and all corrections made, five copies of the final SHOP DRAWINGS shall be submitted for approval and distribution to all parties. Electronic copies of SHOP DRAWINGS is acceptable and preferred.
- 5.2 When submitted for the ENGINEER'S REVIEW, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked, and approved the SHOP DRAWING and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.
- 5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. MATERIALS, SERVICES, AND FACILITIES

- 6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.
- 6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection. All equipment, including but not limited to motors, drives, gear reducers, electrical switch gear, heating, ventilation and air conditioning equipment, communication and instrumentation shall be stored in a secure, heated, ventilated and dry space. Storage must be approved by the ENGINEER. The ENGINEER'S approval of the storage plan shall not release the CONTRACTOR from responsibility for the equipment. Equipment that is not suitably stored shall not be paid for until storage requirements are met. The CONTRACTOR shall be required to comply with the manufacturers' requirements concerning lubrication, oil changes, and other special conditions during the storage period and until the equipment is installed, start-up of the equipment is instituted, and the equipment is finally accepted or determined as substantially completed.
- 6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.
- 6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.
- 6.5 Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.
- 6.6 Materials, supplies, or equipment to be included into the WORK shall be new and unused.

7. INSPECTION AND TESTING

- 7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.
- 7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS. The CONTRACTOR shall notify the OWNER of the work schedule planned in order that adequate inspection can be made. No work may be performed in any day on which it was not scheduled. A minimum of 12 hours' notice of change in work schedule must be given to OWNER by

CONTRACTOR. If CONTRACTOR does not work on a scheduled day, the CONTRACTOR will be charged the cost incurred by the OWNER for the lost work of the inspector.

- 7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.
- 7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness.
- 7.5 Inspections, tests, or approvals by the ENGINEER or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.
- 7.6 The ENGINEER and other OWNER representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all WORK, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide facilities for such access and observation of the WORK and also for any inspection, or testing thereof.
- 7.7 If any WORK is covered contrary to the written instructions of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for observation and replaced at the CONTRACTOR'S expense.
- 7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose, or otherwise make available for observation, inspection, or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

- 8.1 Whenever a material, article, or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that the first brand name listed in the SPECIFICATIONS is that around which the DRAWINGS have been prepared. Should the second or another brand name be utilized in preparing the BID, the CONTRACTOR shall be responsible for assuring that the costs of all changes, including costs of changes to the CONTRACT DOCUMENTS, required by such use are also included in the BID. The CONTRACTOR may recommend the substitution of a material, article, or piece of

equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue cut, if piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

- 8.2 The ENGINEER and OWNER shall have final authority in reviewing and determining if any proposed substitution is an acceptable equal product.

9. PATENTS

- 9.1 The CONTRACTOR shall pay all applicable royalties and license fees. The CONTRACTOR shall defend all suits or claims for infringement of patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process, or product specified is an infringement of a patent, CONTRACTOR shall be responsible for such loss unless CONTRACTOR promptly gives such information to the ENGINEER.

10. SURVEYS, PERMITS, REGULATIONS

- 10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations, and other working points, lines, elevations, and cut sheets.
- 10.2 The CONTRACTOR shall carefully preserve benchmarks, reference points, and stakes; and, in case of willful or careless destruction, CONTRACTOR shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.
- 10.3 Permits and licenses for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, CONTRACTOR shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY, AND PERSONS

- 11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR will take all necessary precautions for the safety of, and will protect the persons who may be affected thereby, protect all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and protect other property at the site adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- 11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. The CONTRACTOR will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. The CONTRACTOR will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either or them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.
- 11.3 In emergencies affecting safety of persons or the WORK or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, shall act to prevent threatened damage, injury, or loss. CONTRACTOR will give OWNER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

- 12.1 CONTRACTOR shall supervise and direct the WORK. CONTRACTOR shall be solely responsible for means, methods, techniques, sequences, and procedures of construction. CONTRACTOR shall employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by CONTRACTOR as CONTRACTOR'S representative at the site. Supervisor shall have full authority to act on behalf of CONTRACTOR and all communications given to the supervisor shall be as binding as if given to CONTRACTOR. Supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

- 13.1 The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGEORDER.

- 13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter, the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14. CHANGES IN CONTRACT PRICE

- 14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:
- 14.1.1 Unit prices previously approved. Under this method, it is understood that addition to or deletion of quantities of WORK in excess of 25 percent may be cause for review of the agreed unit price.
- 14.1.2 An agreed lump sum. For the negotiation of the agreed lump sum amount, the CONTRACTOR shall furnish the ENGINEER a breakdown of all labor, materials, supplies, and equipment utilizing the costing principles described under 14.1.3.
- 14.1.3 The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the WORK. In addition, there shall be added an amount to be agreed upon but not to exceed 15 percent of the actual cost of the WORK to cover the cost of general conditions, overhead and profit. To amplify the items described under 14.1.3, labor shall include the crew foreman but not supervisory, office, or administrative personnel, labor costs shall include taxes, insurance, and actual fringe benefits paid; and, rental rates for equipment owned by the CONTRACTOR shall not exceed 75 percent of Associated Equipment Distributors book rental monthly rates. To costs incurred by SUBCONTRACTORS for changes in the WORK, there shall be an added amount not to exceed 10 percent of the subcontract to cover the cost of general conditions, overhead and profit.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- 15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.
- 15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a

reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

- 15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount of \$50.00 per day for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.
- 15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.
 - 15.4.1 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather.
 - 15.4.2 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. CORRECTION OF WORK

- 16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.
- 16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

- 17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of any emergency, notify the OWNER by WRITTEN NOTICE of:
 - 17.1.1 Subsurface or latent physical conditions at the site differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in

the CONTRACT DOCUMENTS.

17.1.2 Unknown physical conditions at the site, of unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if the OWNER finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety (90) days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent; or if the CONTRACTOR makes a general assignment for the benefit of CONTRACTOR'S creditors; or if a trustee or receiver is appointed for the CONTRACTOR or for any of the CONTRACTOR'S property; or if the CONTRACTOR'S files a petition to take advantage of any debtor's act; or to reorganize under the bankruptcy or applicable laws; or if the CONTRACTOR repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment; or if the CONTRACTOR repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials, or equipment; or if the CONTRACTOR disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction of the WORK; or if the CONTRACTOR disregards the authority of the ENGINEER; or if the CONTRACTOR otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment, and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method the OWNER may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the

OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

- 18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.
- 18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the CONTRACT. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.
- 18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER; or under any order of court or other public authority; or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted; or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and

the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days WRITTEN NOTICE to the OWNER and the ENGINEER stop the WORK until he has paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

- 18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT shall be made to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. PAYMENTS TO CONTRACTOR

- 19.1 One final invoice shall be submitted at the completion of the work.
- 19.2 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

- 20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the PERFORMANCE BOND and PAYMENT BONDS.

21. INSURANCE

- 21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:
- 21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts; and
- 21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees; and
- 21.1.3 Claims for damages because of bodily injury, sickness liability coverage which are sustained
(1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and
- 21.1.4 Claims for damages because of bodily injury, sickness, or disease, or death of any person other than his employees; and
- 21.1.5 Claims for damages because of injury in or destruction of tangible property, including loss of use resulting there from.
- 21.2 Certificates of insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These certificates shall contain a provision that coverages afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.
- 21.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:
- 21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR

under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting there from, sustained by any one person in any one accident; and a limit of liability of not less than

\$1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damage sustained by two or more persons in any one accident.

- 21.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the WORK is performed. Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any WORK is sublet, the CONTRACTOR shall require each SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous WORK under this CONTRACT at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

22. CONTRACT SECURITY

Not used for this project.

23. ASSIGNMENTS

- 23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign, or otherwise dispose of the CONTRACT or any portion thereof, or of their right, title, or interest therein, or their obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION

- 24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that such claims, damage, loss, or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property including the loss of use resulting there from; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

- 24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents

or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

- 24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER or ENGINEER'S employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

- 25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate the CONTRACTOR'S WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.
- 25.2 The OWNER may perform additional WORK related to the PROJECT, or OWNER may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if the CONTRACTOR is performing the additional WORK), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate the CONTRACTOR'S WORK with theirs.
- 25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, WRITTEN NOTICE thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves the CONTRACTOR in additional expense or entitles the CONTRACTOR to an extension of the CONTRACT TIME, the CONTRACTOR may make a claim therefore as provided in Sections 13 and 14.

26. SUBCONTRACTING

- 26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty CONTRACTORS.
- 26.2 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of any SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as the CONTRACTOR is for the acts and omissions of persons directly employed by the CONTRACTOR.

- 26.3 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.
- 26.4 Nothing contained in the CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

- 27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. The ENGINEER shall decide questions, which may arise as to quality and acceptability of materials furnished and WORK performed. The ENGINEER shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.
- 27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply at the ENGINEER'S discretion.
- 27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.
- 27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHT-OF-WAYS

- 28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and right-of-ways necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.
- 28.2 The OWNER shall provide to the CONTRACTOR information, which delineates and describes the lands owned and right-of-ways acquired.
- 28.3 The CONTRACTOR shall provide at CONTRACTOR'S own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTY

- 29.1 Unless noted otherwise in the CONTRACT DOCUMENTS the CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of FINAL ACCEPTANCE. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of FINAL

ACCEPTANCE of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects.

The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The PERFORMANCE BOND shall remain in full force and effect through the guarantee period.

30. TAXES

- 30.1 The CONTRACTOR will pay all sales, consumer, use, and other similar taxes required by the law of the place where the WORK is performed.

31. CLEAN UP ON COMPLETION OF PROJECT

- 31.1 On completion of the WORK covered by any of the sections of this PROJECT, the CONTRACTOR for said section shall clean up the entire premises occupied by his operations, and this area shall be left neat and clean of trash, debris, piles of earth, waste materials or equipment. All surplus materials and equipment, trash, debris, and other foreign matter shall be disposed of as directed by the ENGINEER or OWNER. The entire project or sections thereof shall be made ready for the OWNER'S use, and the CONTRACTOR shall assist as may be necessary in placing any equipment furnished under the contract in proper operating condition.

32. WORK HOURS

- 32.1 Monday through Friday from 7:00 am to 4:30 pm and other hours if approved in advance by the OWNER.

33. PROJECT IDENTIFICATION SIGNBOARD

Not required for this project.

34. SUPPLEMENTAL CONDITIONS

- 34.1 The following additions to, substitutions for, or explanation of the GENERAL CONDITIONS, if any, shall be included as part of these CONTRACT DOCUMENTS. The number utilized refer to those contained in the GENERAL CONDITIONS.

35. NONDISCRIMINATION PROVISIONS

- 35.1 The successful CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of the nondiscrimination clause.

- 35.2 The CONTRACTOR, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that the Contractor is an equal opportunity employer. Notices, advertisements, and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- 35.3 The CONTRACTOR will include the provision of the foregoing paragraph in every subcontract or purchase order over ten thousand dollars (\$10,000.) so that the provisions will be binding upon each subcontractor or vendor.

36. IMMIGRATION AND CONTROL ACT OF 1986

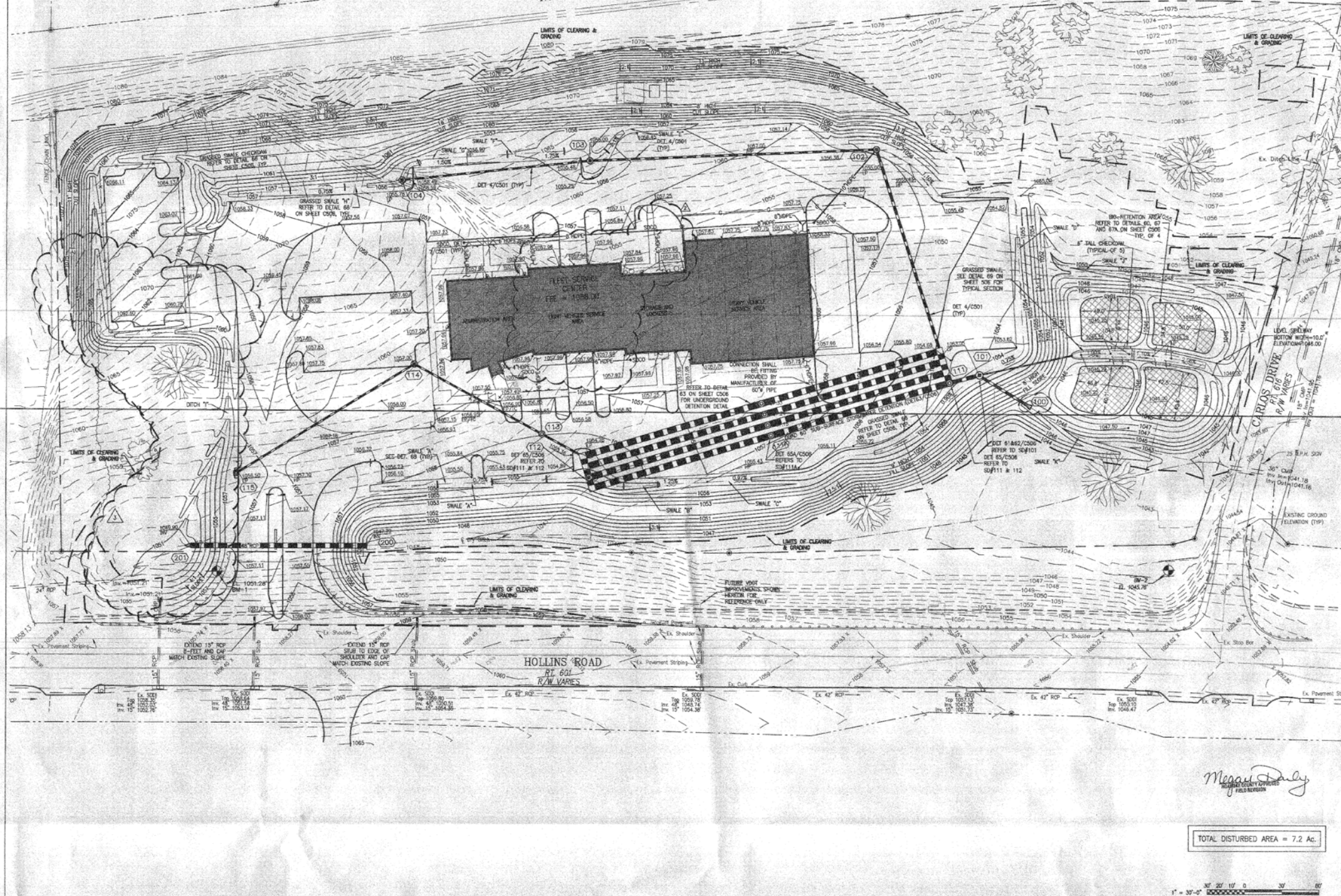
- 36.1 CONTRACTOR is aware of and understands the Immigration Reform and Control Act of 1986 (IRCA) and is in compliance with IRCA; that it acknowledges its responsibility to complete I-9 Employment Eligibility Verification forms for all of its employees assigned to work on County contracts who are not authorized to work in the United States; and that it agrees to defend and indemnify the county for any liability arising out of claims that the contractor's employees are not authorized to work in the United States or any other claims based upon any alleged violations of IRCA by the contractor.

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ATTACHMENT B TO
**IFB # 2018-064 REPAIR/MAINTAIN BIORETENSION FACILITIES
FLEET SERVICE CENTER AND GLENVAR BRANCH LIBRARY
PLANS/DRAWINGS**

MERIDIAN OF VDOT PLANS
0601-080-233, C-601
SHEETS 7 AND 8

NORFOLK SOUTHERN CORPORATION (66' R/W)



- GENERAL NOTES
1. EXISTENCE DATA NOT ENCOUNTERED BY THE SURVEYOR DURING THE SURVEYANCE.
 2. ALL FINISH GRADE SPOT ELEVATIONS ARE TO EDGE OF PAVEMENT/ROOF OF CURB UNLESS OTHERWISE NOTED.
 3. LENGTH OF FLOW DRAIN PIPE IS INDICATED BY DISTANCE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
 4. REFER TO SHEET 68 ON SHEET C601 FOR DRAINAGE DRAINAGE AND CROSS SECTIONS.
 5. COMPARISON OF FILL MATERIALS MUST BE VERIFIED ON THE 'STATEMENT OF SPECIAL INSPECTION' FORM PROVIDED WITHIN THE SPECIFICATIONS.



FLEET SERVICE
CENTER
ROANOKE COUNTY
5253 Old Hollins Rd
Roanoke, VA 24019
IFB-0898

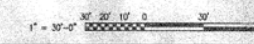


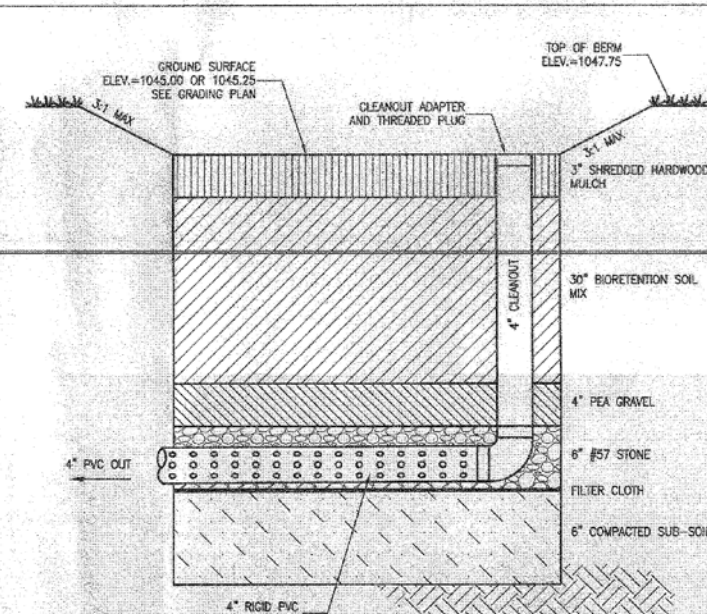
DATE: 08/01/2008
DESIGN ARCHITECT: SPECTRUM DESIGN
PROJECT NO.: 08110
CHECKED BY: [Signature]
REVISIONS: [Table with 3 columns: NO., DATE, DESCRIPTION]
COUNTY COMMENTS: [Table with 3 columns: NO., DATE, DESCRIPTION]

SHEET TITLE: GRADING AND DRAINAGE PLAN

C104

TOTAL DISTURBED AREA = 7.2 AC.



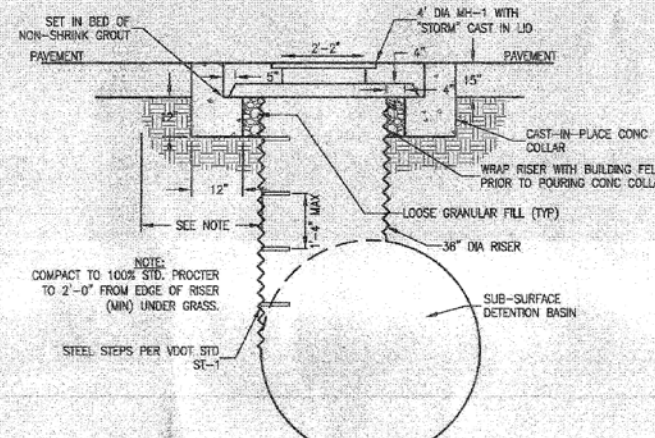


67A BIO-RETENTION AREA PROFILE (TYP)
C104 C506 NO SCALE

NOTE: DO NOT INSTALL BIO-RETENTION AREA MATERIALS UNTIL ALL UPSTREAM AREAS ARE COMPLETELY STABILIZED. CONTRACTOR SHALL RECEIVE APPROVAL FROM A/E PRIOR TO INSTALLATION.

67 BIO-RETENTION AREA SECTION (TYP)
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE BIO-RETENTION AREA OR INSTALL MATERIALS UNTIL ALL UPSTREAM AREAS ARE COMPLETELY STABILIZED. CONTRACTOR SHALL RECEIVE APPROVAL FROM ROANOKE COUNTY AND A/E PRIOR TO INSTALLATION.

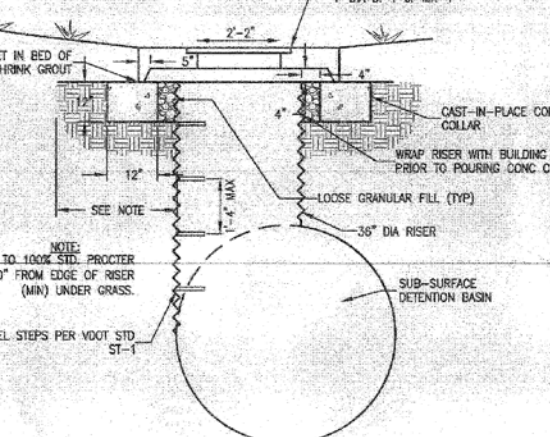


67B BIO-RETENTION AREA SECTION (TYP)
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.

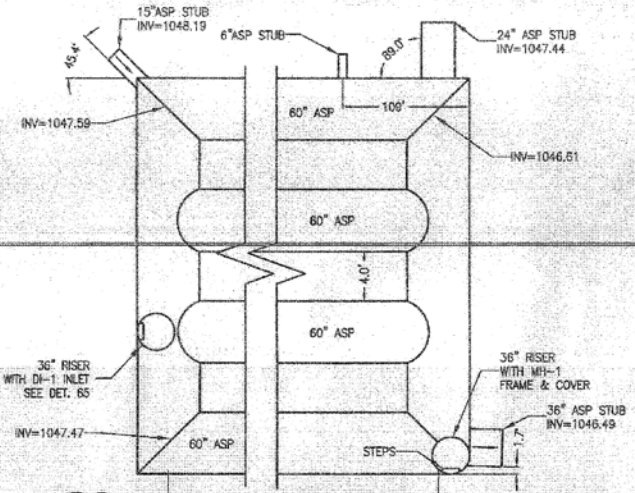
68 GRASS SWALE DETAIL
C104 C506 NO SCALE

NOTES:
1. THIS DETAIL IS APPLICABLE FOR DITCHES "A" THROUGH "H" WHERE CHANNEL SLOPE IS LESS THAN 2:02.
2. SPACE "CHECKDAM" IN ACCORDANCE WITH VESCH GUIDELINES. THE TOP OF EACH CHECKDAM SHALL BE ROUGHLY LEVEL WITH THE INVERT OF THE CHECKDAM DIRECTLY UPSTREAM. SEE SHEET C104 FOR TYPICAL CHECKDAM LAYOUT.
3. DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.



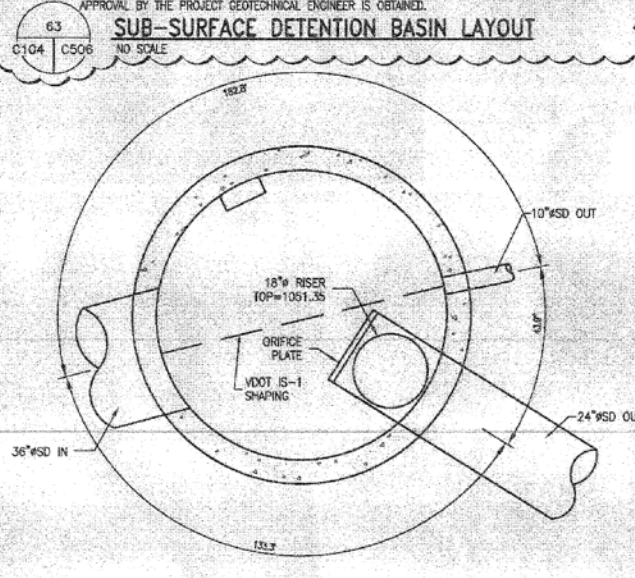
68 GRASS SWALE DETAIL
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.



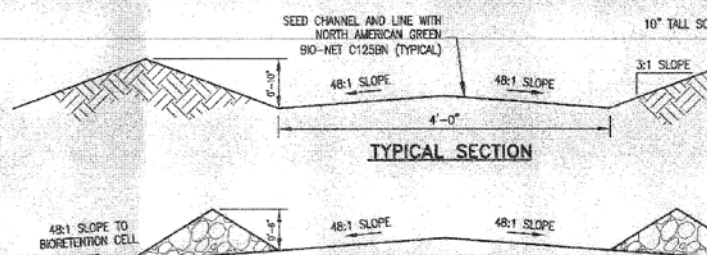
63 SUB-SURFACE DETENTION BASIN LAYOUT
C104 C506 NO SCALE

NOTES:
1. STEPS SHALL BE PROVIDED IN EACH RISER. STEPS SHALL BE IN ACCORDANCE WITH VDOT STD. 1.
2. ALL RISERS & CONNECTIONS SHALL BE FACTORY MADE AND INTEGRAL WITH THE 60\"/>



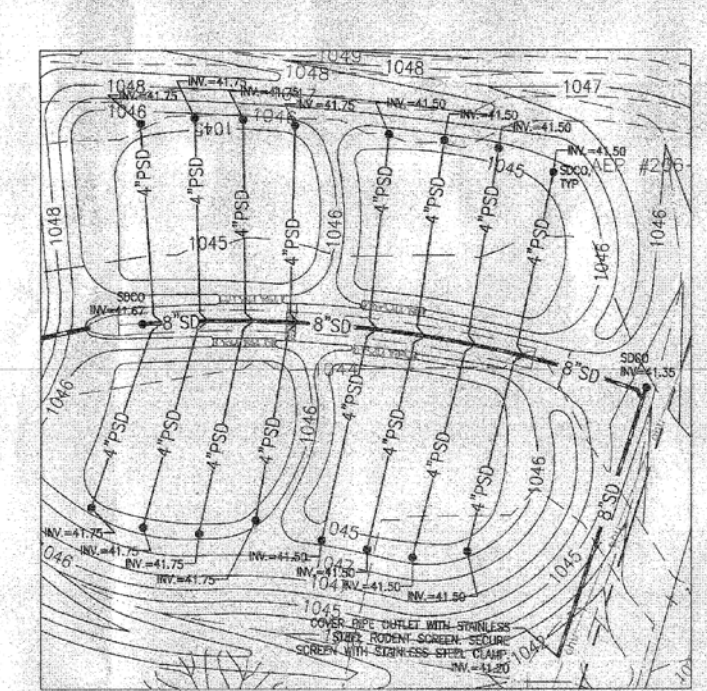
63 SUB-SURFACE DETENTION BASIN LAYOUT
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.



65A MANWAY RISER DETAIL (IN PAVEMENT) - UNDERGROUND DETENTION
C105 C506 NO SCALE

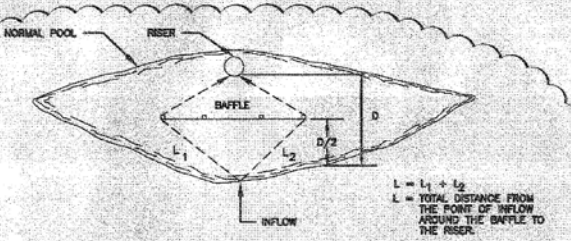
NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.



60 BIO-RETENTION AREA DRAIN LAYOUT
C104 C506 SCALE 1\"/>

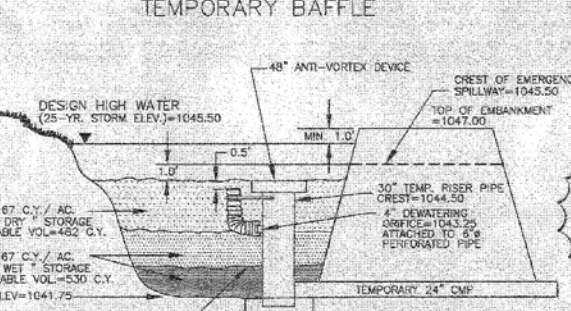
NOTE: ALL UNDERDRAIN PIPES SHALL HAVE A POSITIVE SLOPE TO THE OUTLET. DO NOT INSTALL BIO-RETENTION AREA MATERIALS UNTIL ALL UPSTREAM AREAS ARE COMPLETELY STABILIZED. CONTRACTOR SHALL RECEIVE APPROVAL FROM A/E AND ROANOKE COUNTY PRIOR TO INSTALLATION.

LEGEND:
PSD PERFORATED STORM DRAIN, RIGID, (NON-CORRUGATED) PVC
SD NON-PERFORATED STORM DRAIN, (NON-CORRUGATED) PVC
SDC STORM DRAIN, CLEANOUT, INVERT SHALL BE BASED UPON DETAIL 67 OF THIS SHEET



64 TEMPORARY SEDIMENT BASIN OUTLET DETAIL
C105 C506 NO SCALE

NOTE: TEMPORARY BAFFLES SHALL BE INSTALLED PER VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK STANDARDS AND THIS DETAIL.



64 TEMPORARY SEDIMENT BASIN OUTLET DETAIL
C105 C506 NO SCALE

NOTE: TEMPORARY BAFFLES SHALL BE INSTALLED PER VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK STANDARDS AND THIS DETAIL.

DITCH/SWALE TABLE											
DITCH/CHANNEL LOCATION	BASE	LEFT SIDE	RIGHT SIDE	0-2	V61-2	0-10	V61-10	0-10	V61-10	MIN. DEPTH	FLOW REGIME
SWALE "A"	3.00'	3:1 (max)	3:1 (max)	2.28	1.24	3.07	1.51	0.89	0.88	0.70	SUB-CRITICAL
SWALE "B"	3.00'	3:1 (max)	3:1 (max)	0.86	1.51	1.18	1.88	0.26	0.78	0.78	SUB-CRITICAL
SWALE "C"	3.00'	3:1 (max)	3:1 (max)	1.27	1.58	1.73	1.74	0.26	0.78	0.78	SUB-CRITICAL
SWALE "D"	3.00'	3:1 (max)	3:1 (max)	2.05	1.69	2.78	1.85	0.37	0.87	0.87	SUB-CRITICAL
SWALE "E"	3.00'	3:1 (max)	3:1 (max)	1.41	2.12	1.82	2.34	0.22	0.72	0.72	SUB-CRITICAL
SWALE "F"	3.00'	3:1 (max)	3:1 (max)	1.37	1.97	1.88	2.18	0.23	0.73	0.73	SUB-CRITICAL
SWALE "G"	3.00'	3:1 (max)	3:1 (max)	0.30	1.33	0.89	1.48	0.14	0.64	0.64	SUB-CRITICAL
SWALE "H" (FIRST 100')	3.00'	3:1 (max)	3:1 (max)	2.03	3.57	2.75	3.95	0.19	1.18	1.18	SUPER-CRITICAL
SWALE "H" (LAST 130')	3.00'	3:1 (max)	3:1 (max)	2.03	2.55	2.75	2.73	0.56	1.06	1.06	SUB-CRITICAL
SWALE "I"	2.75'	3:1 (max)	3:1 (max)	0.33	1.54	0.47	1.75	0.12	1.12	1.12	SUB-CRITICAL
SWALE "J"	0.00'	3:1 (max)	3:1 (max)	2.24	3.34	3.05	3.60	0.58	1.08	1.08	SUB-CRITICAL
DITCH "K"	8.00'	3:1 (max)	3:1 (max)	3.20	3.16	5.70	3.65	0.72	1.72	1.72	SUPER-CRITICAL

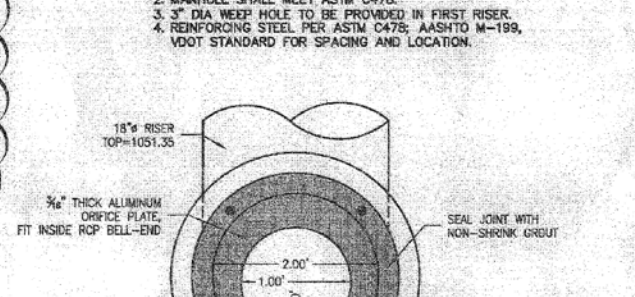
VARIES, SEE GRADING PLAN
IN GENERAL FOR SUB-CRITICAL, MIN. DEPTH=7'-10'+0.5'
FOR SUPER-CRITICAL FLOW, MIN. DEPTH=7'-10'+1.0'

65 DITCH/SWALE TYPICAL SECTION
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.

62 STR 101 DETAIL
C104 C506 NO SCALE

NOTES:
1. 4000 PSI CONCRETE.
2. MANHOLE SHALL MEET ASTM C478.
3. 3\"/>



62 STR 101 DETAIL
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.

61 STR 101 ORIFICE DETAIL
C104 C506 NO SCALE

NOTE: DO NOT EXCAVATE OR INSTALL SOIL MIX, UNDERDRAIN, OR CHECKDAMS UNTIL SITE IS COMPLETELY STABILIZED AND UPON A/E APPROVAL.

KEY PLAN

GENERAL NOTES

13 CHURCH AVENUE, SUITE 101, ROANOKE, VIRGINIA 24011 540.342.0001

ROANOKE, VIRGINIA

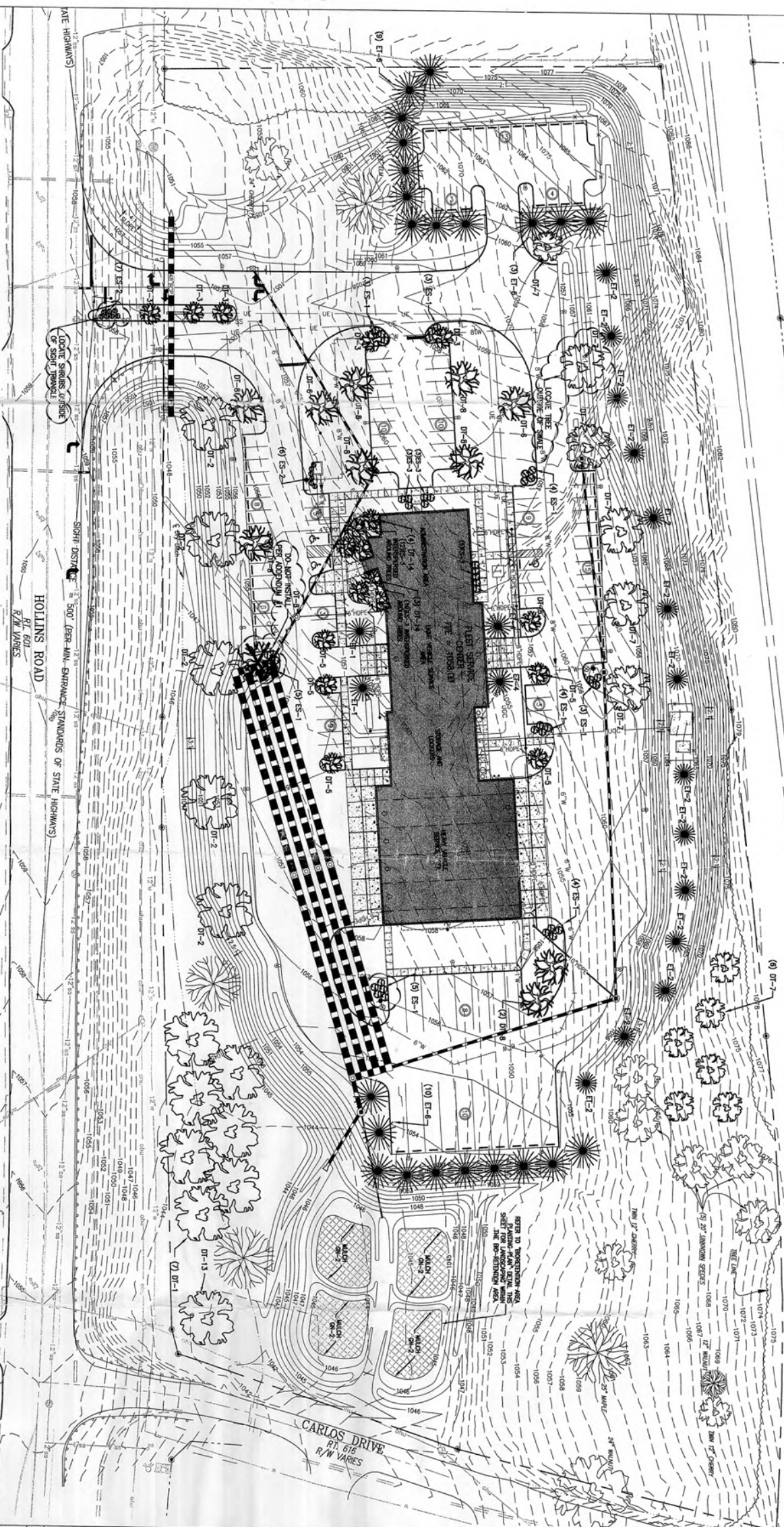
SPECTRUM DESIGN
architects | engineers

FLEET SERVICE CENTER
ROANOKE COUNTY
5253 Old Hollins Rd
Roanoke, VA 24019
IFB-0898

SPECTRUM DESIGN PROJECT NO. 06116

DATE: March 23, 2008
DESIGN ARCHITECT: WWH
PROJECT ARCHITECT: WWH
CHECKED BY: WWH
DRAWN BY: WWH
REVISIONS: 1
COUNTY COMMENTS: 2
DITCH "I" REVISION: 1

SHEET TITLE: STORMWATER MANAGEMENT DETAILS
C506



BIORETENTION AREA PLANTING PLAN (TYPICAL)

SCALE - 1"=10'-0"
NOTES: - SET BACK PLANS FOR TREES NOT LABELED.
PLANTINGS IN OPPOSITE BOREXTENSION CELLS SHALL MATCH THIS PLAN.
ALTERNATE PLANT SPECIES MUST BE APPROVED BY M/E AND FINANCE COUNTY.

BIORETENTION AREA SOIL MIX





[illegible]

ITEM		QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	RESULTS
DOWN CORRESPOND						
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12
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Note 1: Green Coverage of Existing Trees Measured from Orthographic Photos provided by Roanoke County.

TOTAL COVERAGE PROVIDED	614,132
TOTAL COVERAGE REQUIRED	112,822
CROWN COVERAGE PERCENT	55.45%

LEGEND:

- | | | | |
|---|---|---|---|
|  |  |  |  |
| LARGE DECIDUOUS TREE | SMALL DECIDUOUS TREE | EVERGREEN TREE | DECAYED SNAGS |
- * SNAGS SCOTED IN PLAN TO REPRESENT APPROPRIATE SNAGS AT WILDLIFE

1. ALL ROUTE SERVICE (DUMPSTERS/CONTAINERS) AND OUTDOOR STORAGE AREAS IN ALL ZONING DISTRICTS SHALL BE SCREENED FROM SURROUNDING VIEWS. IN ADDITION, GROUND LEVEL MECHANICAL EQUIPMENT SHALL BE SCREENED OR LANDSCAPED.
2. SEED BORELSTON AREAS WITH DENSE CONCENTRATED SEED MIX BERNARD-122, 70%W WETLAND MUDROCK MUDROCK SEEDING RATE = 1/3 LB. PER 1000 S.F.

SEEKING NAME = 1/3 LB. PER 1000 S.F.

SEE BORELSTON AREA PLANTING PLAN FOR TYPICAL TREE AND SHRUB LOCATIONS.

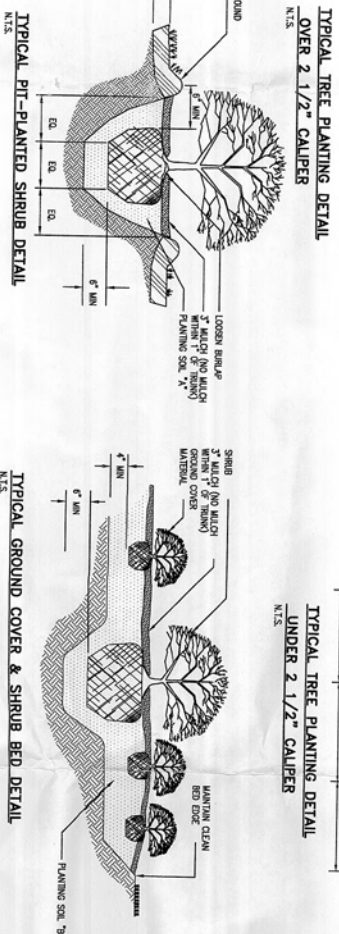
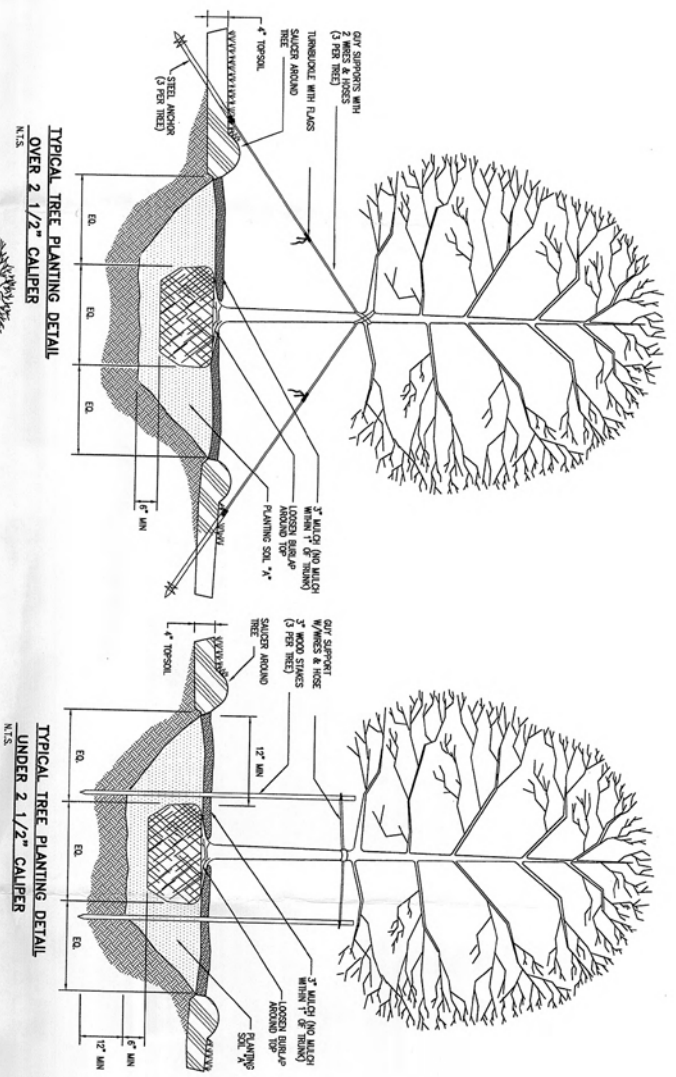


FLEET SERVICE
 CENTER
 ROANOKE COUNTY
 5253 Old Hollins Rd
 Roanoke, VA 24019
 IFB-0898

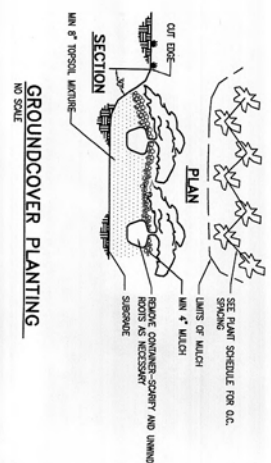


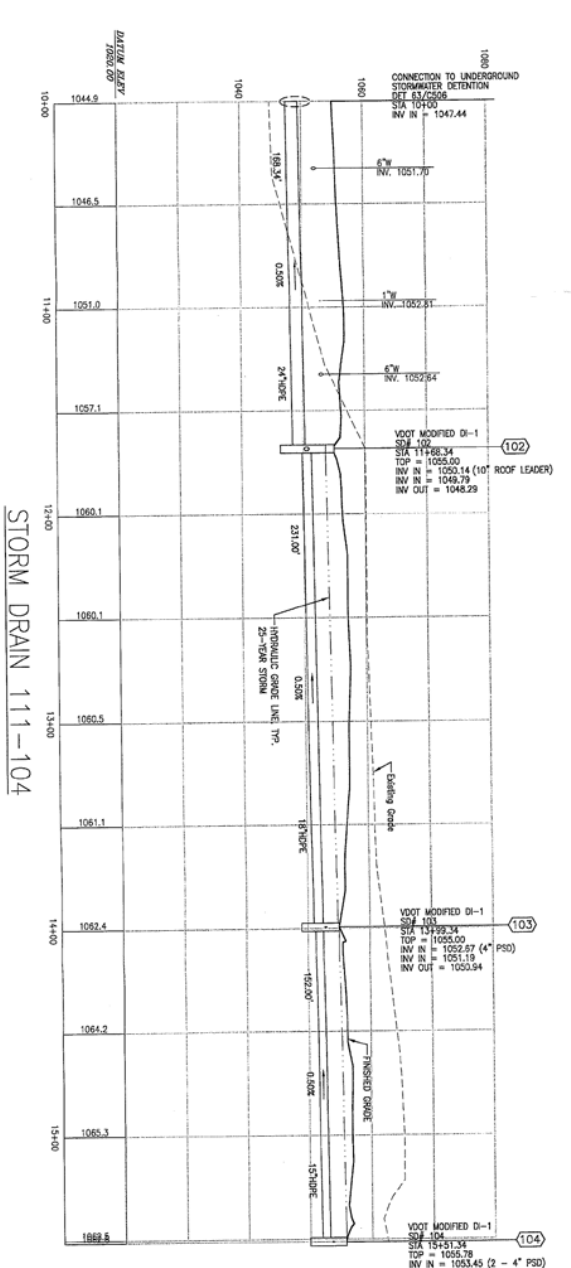
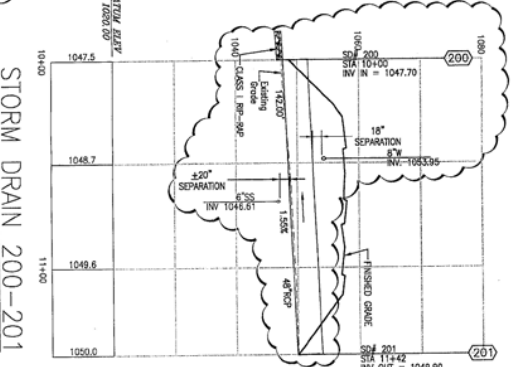
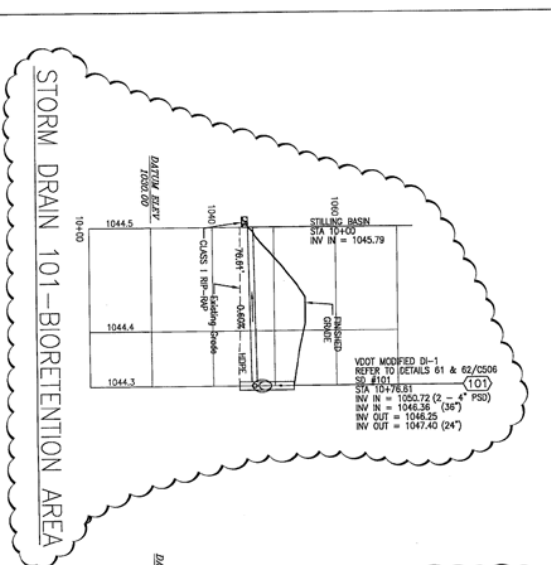
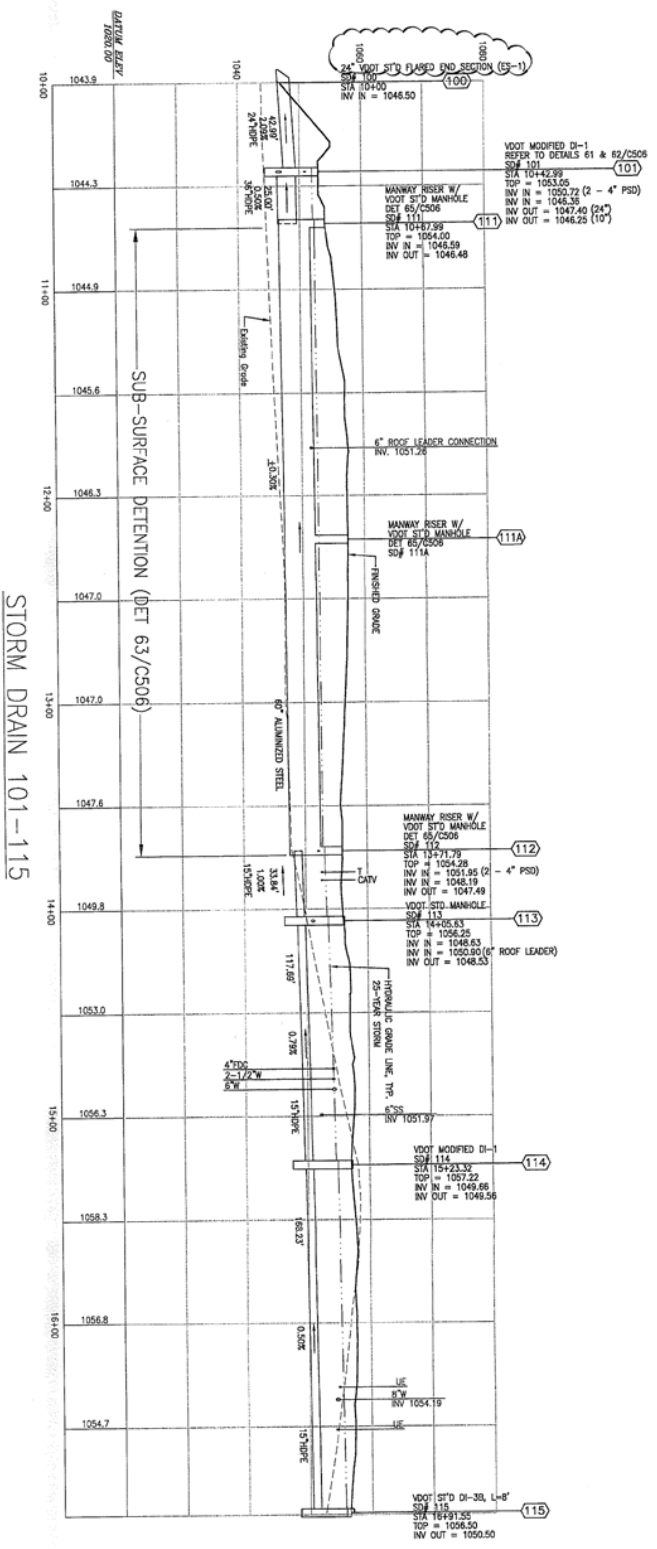
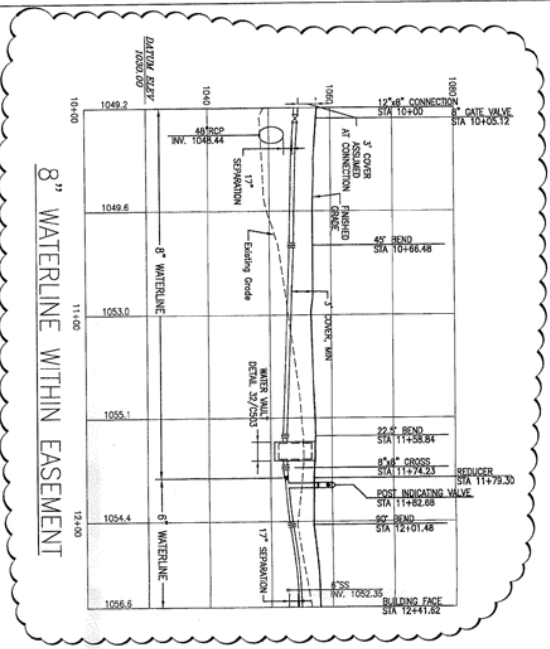
LANDSCAPING PLAN

L101



TYPICAL PLANTING DETAILS
NO SCALE





SPECTRUM DESIGN
P.L.L.C.
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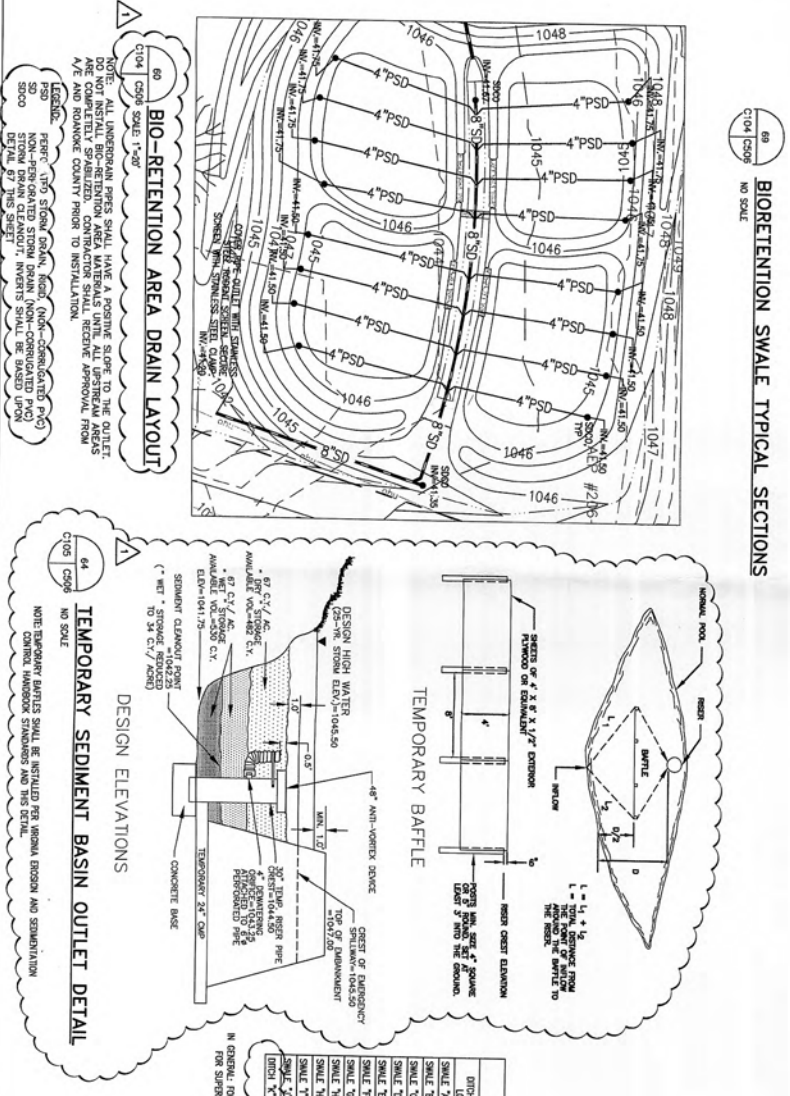
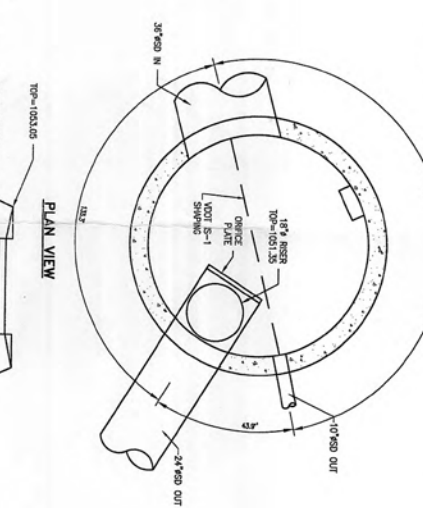
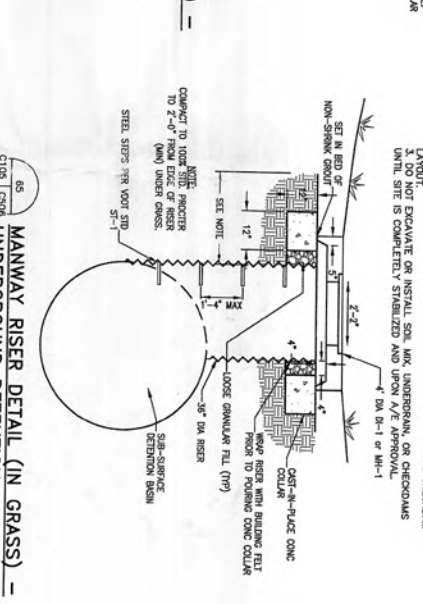
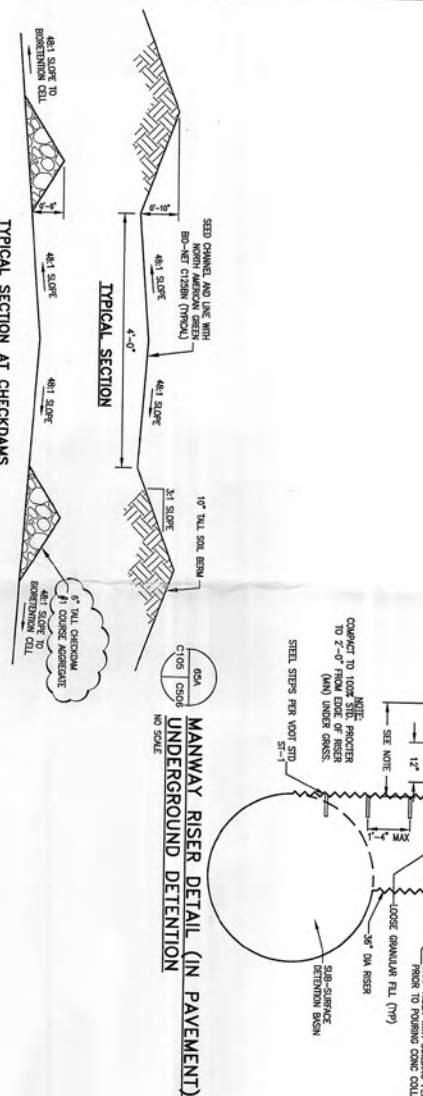
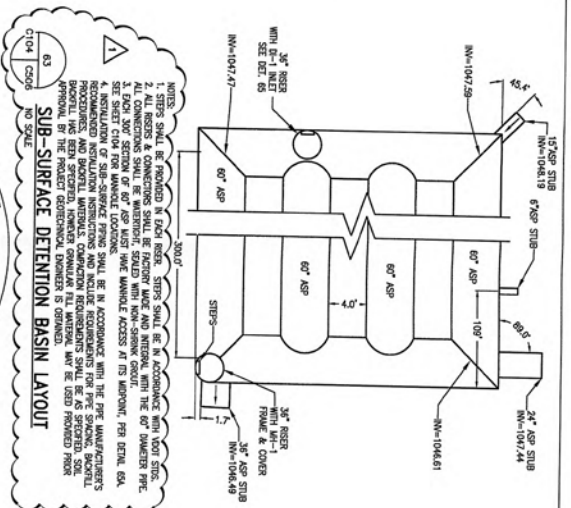
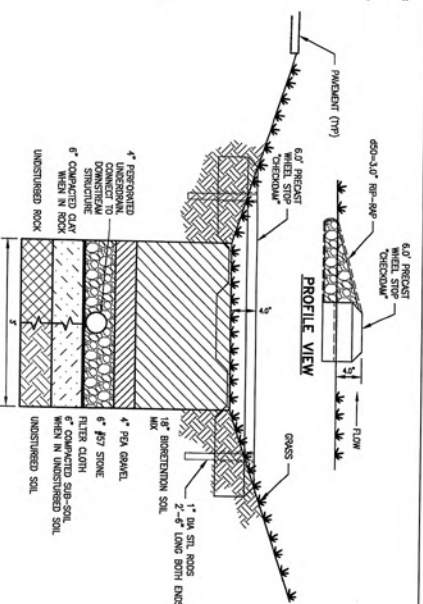
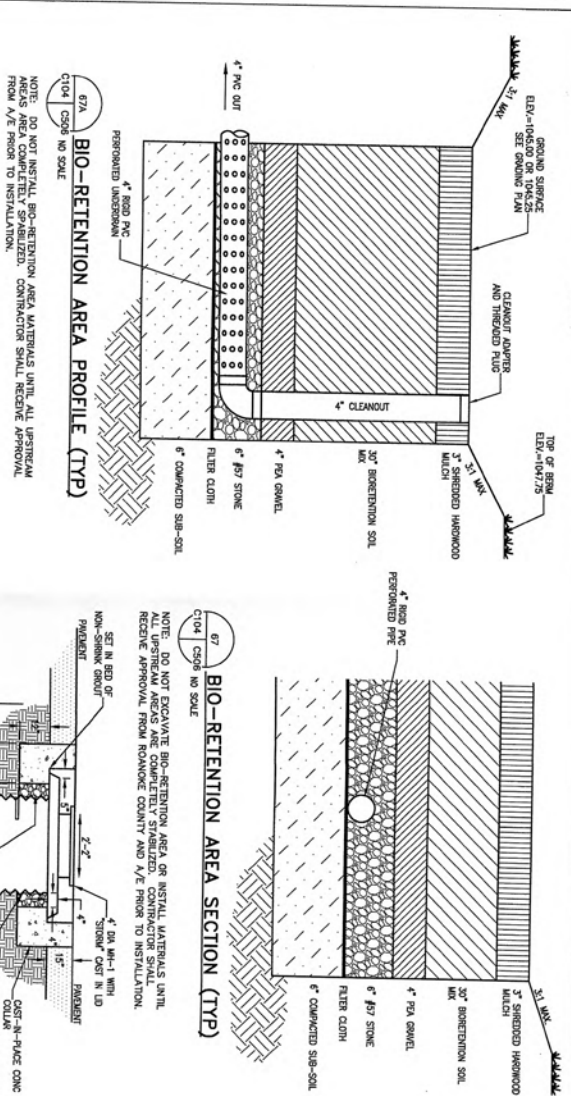
CLIENT SERVICE
CENTER
ROANOKE COUNTY
5253 Old Hollins Rd
Roanoke, VA 24019
IFB-0898

DATE: 11/11/11
DRAWN BY: J. L. HARRIS
CHECKED BY: J. L. HARRIS
APPROVED BY: J. L. HARRIS

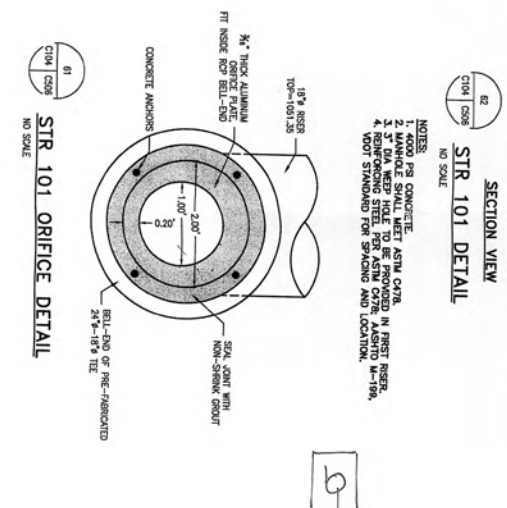
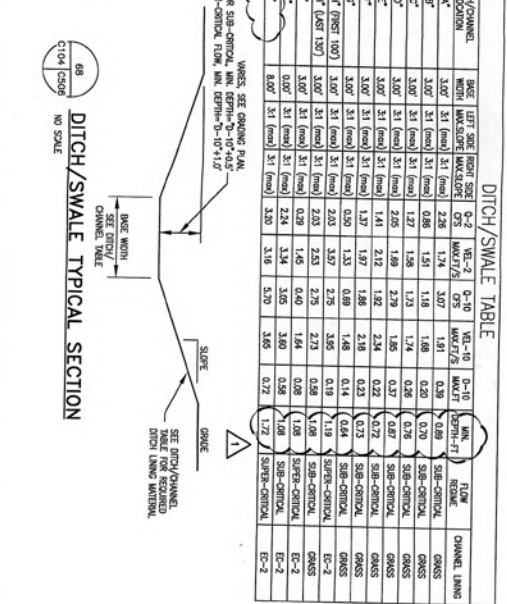
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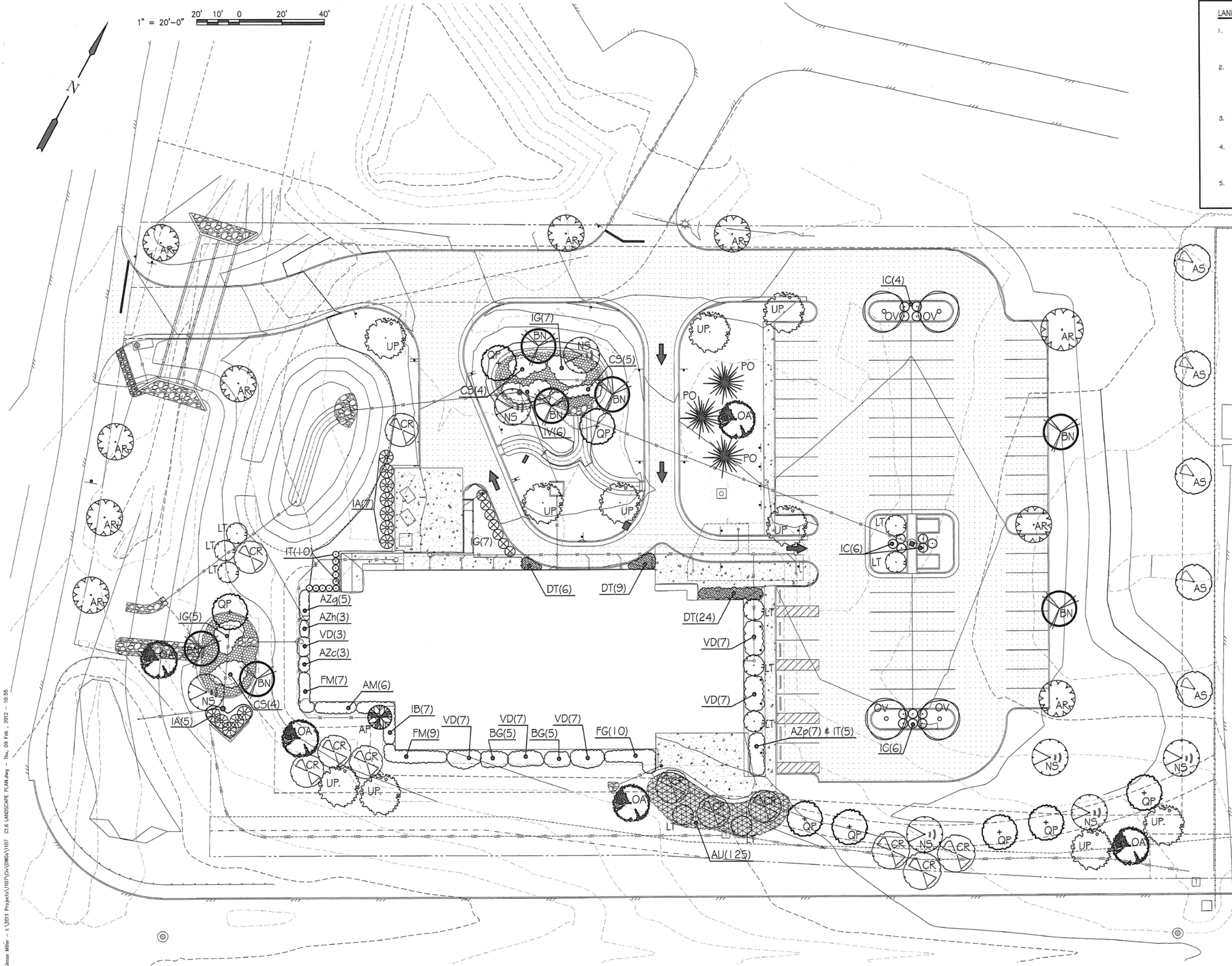
STORM DRAIN PROFILES

C201

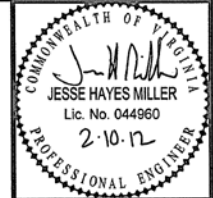


DITCH SMALL TABLE																																																																																																					
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
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DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH	25TH	26TH	27TH	28TH	29TH	30TH	31TH	32TH	33TH	34TH	35TH	36TH	37TH	38TH	39TH	40TH	41TH	42TH	43TH	44TH	45TH	46TH	47TH	48TH	49TH	50TH	51TH	52TH	53TH	54TH	55TH	56TH	57TH	58TH	59TH	60TH	61TH	62TH	63TH	64TH	65TH	66TH	67TH	68TH	69TH	70TH	71TH	72TH	73TH	74TH	75TH	76TH	77TH	78TH	79TH	80TH	81TH	82TH	83TH	84TH	85TH	86TH	87TH	88TH	89TH	90TH	91TH	92TH	93TH	94TH	95TH	96TH	97TH	98TH	99TH	100TH
DRY/CROWN	BASE	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	15TH	16TH	17TH	18TH	19TH	20TH	21TH	22TH	23TH	24TH																																																																												





- LANDSCAPE NOTES:**
1. ALL TREE MATERIALS SHALL MEET THE MINIMUM REQUIREMENTS AS DESCRIBED IN THE MOST RECENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
 2. ALL SHRUB MATERIALS SHALL MEET THE MINIMUM REQUIREMENTS AS DESCRIBED IN THE MOST RECENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. SHRUB MATERIALS SHALL BE WELL-ROOTED AND A MINIMUM OF 3-GALLON CONTAINER SIZE, UNLESS OTHERWISE SPECIFIED. AT THE TIME OF DELIVERY, ALL PLANT MATERIALS NOT IMMEDIATELY PLACED IN THEIR FINAL PLANTING LOCATION MUST BE STORED IN A SHADED LOCATION WITH ADEQUATE AIR CIRCULATION, AND BE KEPT MOIST.
 3. THIS PLAN IS TO MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE ROANOKE COUNTY ZONING ORDINANCE AND THE ROUTE 11/460 CORRIDOR DESIGN GUIDELINES. THE DEVELOPER MAY INCREASE PLANTING DENSITY BEYOND THE MINIMUM REQUIREMENTS.
 4. UPON COMPLETION OF INSTALLATION OF PLANT MATERIAL AND SUBSEQUENT TO FIRST MOWING, CONTACT LANDSCAPE ARCHITECT FOR APPROVAL.



REVISIONS:
NOVEMBER 30, 2011
RC COMMENTS & BID
ADDENDUMS 1, 2, AND 3
FEBRUARY 10, 2012
FOR CONSTRUCTION

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ROANOKE COUNTY PUBLIC LIBRARY
GLENVAR BRANCH LIBRARY
3917 DAUGHTERY ROAD
SALEM, VIRGINIA 24153

DATE:
NOVEMBER 01, 2011
PROJECT NO.
1107
SCALE:
AS NOTED

LANDSCAPE
PLAN

C1.6

216.241.1100
1382 West Ninth Street
Suite 300
Cleveland, Ohio
44113
www.HBMarchitects.com



APPROVED

James Miller - 11/01/2011 Project\1107\DWG\C1.6 LANDSCAPE PLAN.dwg - Thu, 09 Feb, 2012 - 10:55

LANDSCAPE MATERIALS

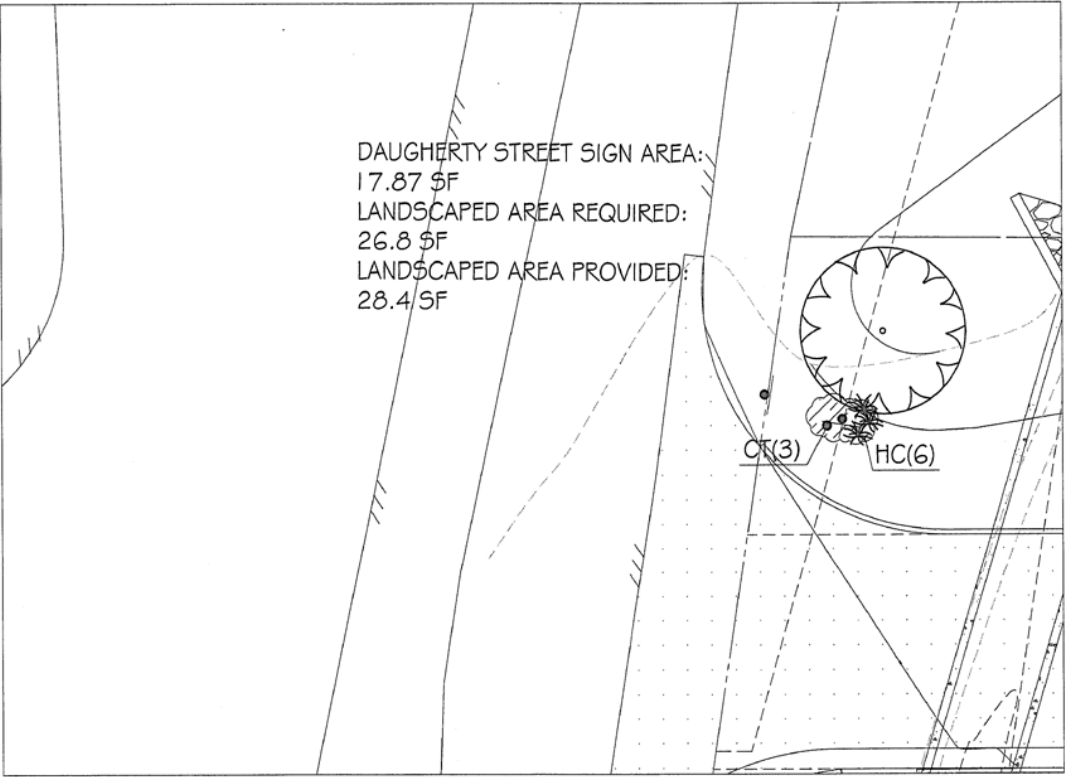
SYMBOL # KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONTAINER	COMMENT	QUANTITY	MATURE CANOPY	TREE CANOPY
TREES								
AP	<i>Acer palmatum 'Sango Kaku'</i>	'SANGO KAKU' JAPANESE MAPLE	5'	B&B#15	-	1	250	250
AR	<i>Acer rubrum 'Red Sunset'</i>	'RED SUNSET' RED MAPLE	2" CAL.	B&B	-	10	1,250	12,500
AS	<i>Acer saccharum 'Green Mountain'</i>	'GREEN MOUNTAIN' SUGAR MAPLE	2" CAL.	B&B	-	5	1,250	6,250
BN	<i>Betula nigra 'Heritage'</i>	'HERITAGE' RIVER BIRCH	10' CLUMP	B&B	3 TRUNKS (2.5" CAL.)	7	1,250	8,750
GR	<i>Cornus x 'Rutdis'</i>	'CELESTIAL WHITE' FLOWERING DOGWOOD	5'	B&B	-	11	250	2,750
LT	<i>Lagerstroemia x 'Natchez'</i>	'NATCHEZ' Crape Myrtle	5'	#10	-	10	250	2,500
NS	<i>Nyssa sylvatica</i>	BLACK GUM	2-1/2" CAL.	B&B	-	7	1,250	8,750
OV	<i>Ostrya virginiana</i>	AMERICAN HOPHORNBEAM	1-1/2" CAL.	B&B	-	4	500	2,000
OA	<i>Oxydendrum arborescens</i>	SOURWOOD	6'	B&B#15	-	5	500	2,500
PO	<i>Picea omorika</i>	SERBIAN SPRUCE	6'	B&B	-	3	500	1,500
QP	<i>Quercus phellos</i>	WILLOW OAK	2-1/2" CAL.	B&B	-	8	1,250	10,000
UP	<i>Ulmus parvifolia 'Allee'</i>	'ALLEE' LACEBARK ELM	1-1/2" CAL.	B&B	-	10	1,250	12,500

CROWN COVERAGE & SCREENING REQUIREMENTS:

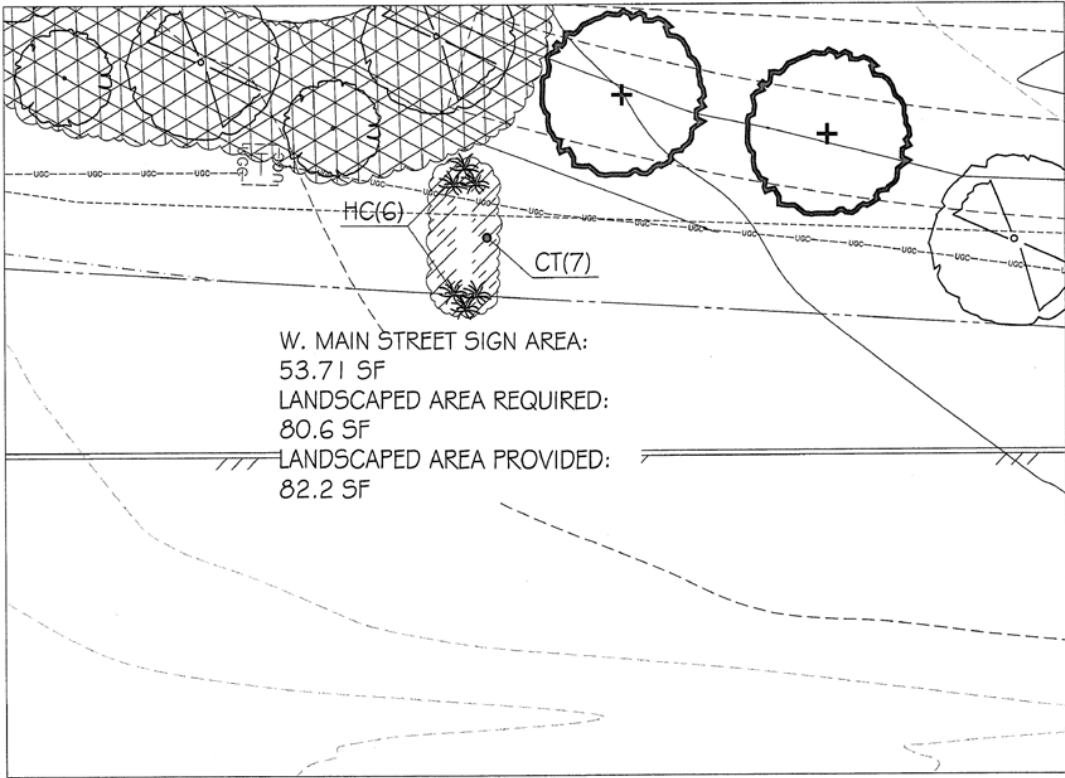
CROWN COVERAGE REQUIRED:
35% OF SITE AREA (3.487 AC OR 151,984 SF) = 53,166 SF
CROWN COVERAGE PROVIDED: 47.0% (71,485 SF)

PER SECTION 30-92-6(F)(1), ALL REFUSE CONTAINERS AND OUTDOOR STORAGE AREAS SHALL BE SCREENED FROM VIEW, AND PER SECTION 30-92-6(F)(2), ALL GROUND AND ROOFTOP MOUNTED MECHANICAL EQUIPMENT SHALL BE SCREENED FROM VIEW, PURSUANT TO THE REQUIREMENTS OF SECTION 30-92-5.

SYMBOL # KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONTAINER	COMMENT	QUANTITY	MATURE CANOPY	TREE CANOPY
SHRUBS								
AM	<i>Aronia melanocarpa var. elata</i>	GLOSSY BLACK CHOKEBERRY	2'	#3	-	6	5	30
AZc	<i>Azalea x 'Girard's Crimson'</i>	GIRARD'S CRIMSON AZALEA	18"-24"	#3	-	3	5	15
AZg	<i>Azalea x 'Gumpo White'</i>	GUMPO WHITE AZALEA	18"-24"	#3	-	5	5	25
AZh	<i>Azalea x 'Yino Crimson'</i>	YINO CRIMSON AZALEA	18"-24"	#3	-	3	5	15
AZp	<i>Azalea x 'Girard's Perfect White'</i>	GIRARD'S PERFECT WHITE AZALEA	18"-24"	#3	-	7	5	35
BG	<i>Buxus x 'Green Mountain'</i>	GREEN MOUNTAIN BOXWOOD	2'	#3	3' O.C.	10	5	50
CS	<i>Cornus sericea 'Cardinal'</i>	'CARDINAL' RED-TWIG DOGWOOD	3'	#3	DIST. EVENLY	13	5	65
CT	<i>Cotoneaster salicifolius 'Repens'</i>	WILLOWLEAF COTONEASTER	12"-15"	#3	DIST. EVENLY	10	5	50
DT	<i>Daphne tangutica</i>	SWEET DAPHNE	18"-24"	#3	DIST. EVENLY	39	5	195
FG	<i>Fothergilla gardenii</i>	DWARF FOTHERGILLIA	18"-24"	#3	-	10	5	50
FM	<i>Fothergilla gardenii 'Mount Airy'</i>	'MOUNT AIRY' FOTHERGILLIA	2'	#3	-	16	5	80
HC	<i>Hemerocallis 'Happy Returns'</i>	'HAPPY RETURNS' DAYLILY	-	#1	-	9	-	-
IA	<i>Ilex x aquiperny 'Dragon Lady'</i>	'DRAGON LADY' HOLLY	5'	#7/B&B	5' O.C.	12	10	120
IB	<i>Ilex cornuta 'Burfordi Nana'</i>	'DWARF BURFORD' HOLLY	2'	#3	-	7	5	35
IC	<i>Ilex crenata 'Soft Touch'</i>	'SOFT TOUCH' JAPANESE HOLLY	2'	#3	-	16	5	80
IG	<i>Ilex glabra 'Nigra'</i>	'NIGRA' INK BERRY	3'	#3	-	19	5	95
IV	<i>Ilex verticillata</i>	WINTERBERRY HOLLY	3'	#3	DIST. EVENLY	6	5	30
IT	<i>Itsea virginica 'Sprich'</i>	'LITTLE HENRY' SWEETSPICE	2'	#3	-	15	5	75
VD	<i>Viburnum daniellii</i>	DAVID VIBURNUM	2'	#3	-	38	5	190
GROUND COVER								
AJ	<i>Arctostaphylos uva-ursi 'Massachusetts'</i>	'MASSACHUSETTS' BEARBERRY	-	#1	3' O.C.	125	-	-
DC	<i>Deschampsia caespitosa</i>	TUFTED HAIRGRASS	PLUG/PREFERRED SEED(ALT.)	-	1,500 SF	-	-	-
							TOTAL CANOPY	71,985



DAUGHERTY ROAD SIGN LANDSCAPING DETAIL
1"=10'



MAIN STREET SIGN LANDSCAPING DETAIL
1"=10'



REVISIONS:
NOVEMBER 30, 2011
R0 COMMENTS & BID
ADDENDUMS 1, 2, AND 3
FEBRUARY 10, 2012
FOR CONSTRUCTION

A NEW BUILDING FOR
ROANOKE COUNTY PUBLIC LIBRARY
GLENVAR BRANCH LIBRARY
3917 DAUGHERTY ROAD SALEM, VIRGINIA 24153

DATE:
NOVEMBER 01, 2011
PROJECT NO:
1107
SCALE:
AS NOTED

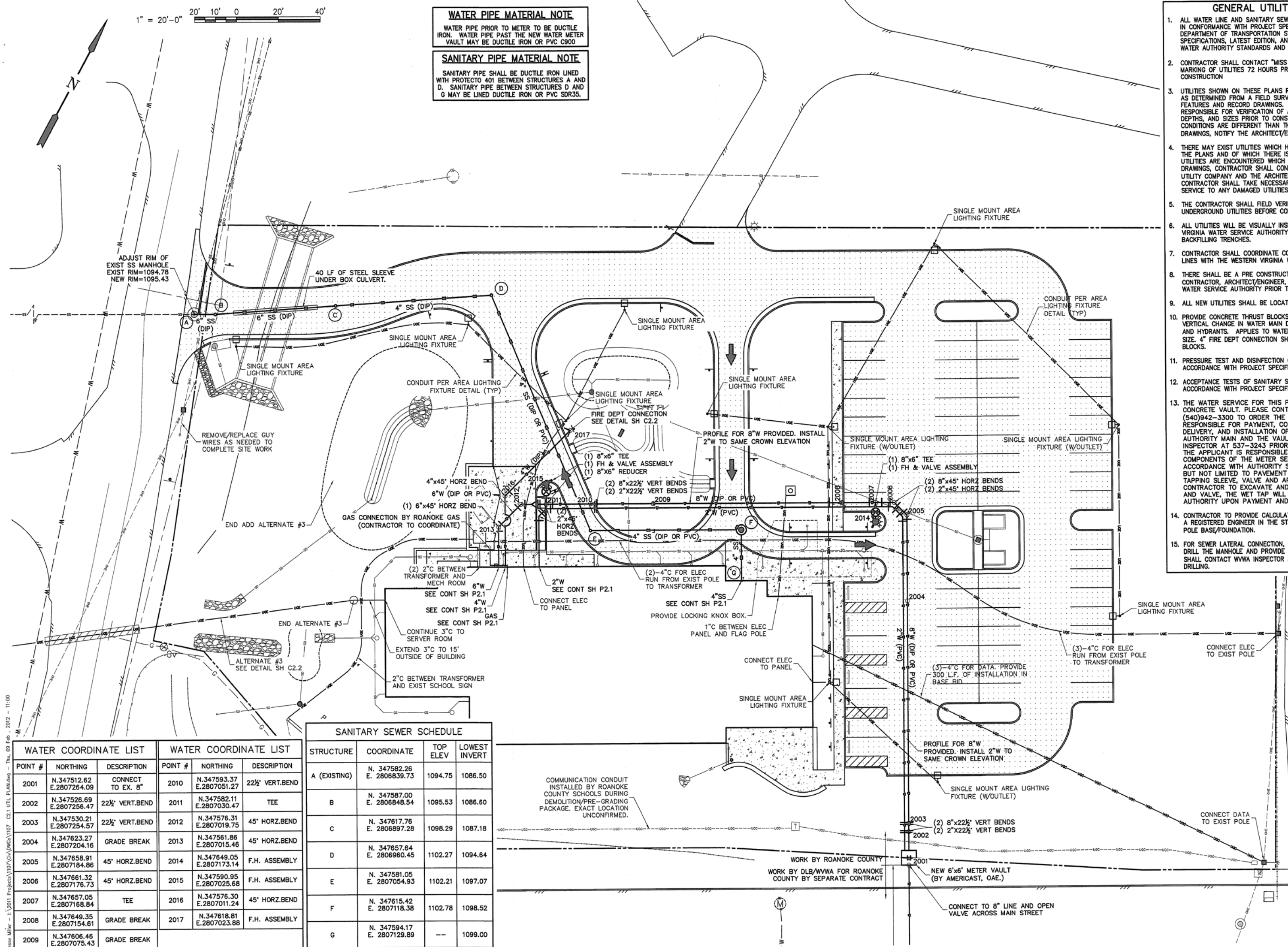
LANDSCAPE
SCHEDULE &
DETAILS

C1.7

216-241-1100
1382 West Ninth Street
Suite 300
Cleveland, Ohio 44113
www.HBMarchitects.com



APPROVED



WATER PIPE MATERIAL NOTE
WATER PIPE PRIOR TO METER TO BE DUCTILE IRON. WATER PIPE PAST THE NEW WATER METER VAULT MAY BE DUCTILE IRON OR PVC C900

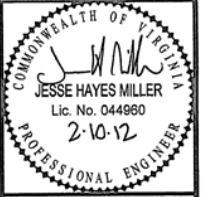
SANITARY PIPE MATERIAL NOTE
SANITARY PIPE SHALL BE DUCTILE IRON LINED WITH PROTECTO 401 BETWEEN STRUCTURES A AND D. SANITARY PIPE BETWEEN STRUCTURES D AND G MAY BE LINED DUCTILE IRON OR PVC SDR35.

- GENERAL UTILITY NOTES**
- ALL WATER LINE AND SANITARY SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH PROJECT SPECIFICATIONS AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, LATEST EDITION, AND THE WESTERN VIRGINIA WATER AUTHORITY STANDARDS AND SPECIFICATIONS.
 - CONTRACTOR SHALL CONTACT "MISS UTILITY" (800-552-7001) FOR MARKING OF UTILITIES 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
 - UTILITIES SHOWN ON THESE PLANS REPRESENT UTILITY LOCATIONS AS DETERMINED FROM A FIELD SURVEY OF ABOVE GROUND UTILITY FEATURES AND RECORD DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UTILITY LOCATIONS, DEPTHS, AND SIZES PRIOR TO CONSTRUCTION. IF EXISTING CONDITIONS ARE DIFFERENT THAN THAT WHICH IS SHOWN ON THE DRAWINGS, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
 - THERE MAY EXIST UTILITIES WHICH HAVE NOT BEEN SHOWN ON THE PLANS AND OF WHICH THERE IS NO RECORD. IF ACTIVE UTILITIES ARE ENCOUNTERED WHICH WERE NOT INDICATED ON THE DRAWINGS, CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANY AND THE ARCHITECT/ENGINEER IMMEDIATELY. CONTRACTOR SHALL TAKE NECESSARY STEPS TO RESTORE UTILITY SERVICE TO ANY DAMAGED UTILITIES AS SOON AS POSSIBLE.
 - THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WITH CONSTRUCTION.
 - ALL UTILITIES WILL BE VISUALLY INSPECTED BY THE WESTERN VIRGINIA WATER SERVICE AUTHORITY INSPECTOR PRIOR TO BACKFILLING TRENCHES.
 - CONTRACTOR SHALL COORDINATE CONNECTIONS TO EXISTING WATER LINES WITH THE WESTERN VIRGINIA WATER AUTHORITY.
 - THERE SHALL BE A PRE CONSTRUCTION MEETING WITH THE CONTRACTOR, ARCHITECT/ENGINEER, AND THE WESTERN VIRGINIA WATER SERVICE AUTHORITY PRIOR TO BEGINNING CONSTRUCTION.
 - ALL NEW UTILITIES SHALL BE LOCATED UNDERGROUND.
 - PROVIDE CONCRETE THRUST BLOCKS AT EVERY HORIZONTAL AND VERTICAL CHANGE IN WATER MAIN DIRECTION, TEES, PLUGS, CAPS, AND HYDRANTS. APPLIES TO WATER MAINS 6" OR GREATER IN SIZE. 4" FIRE DEPT CONNECTION SHALL ALSO RECEIVE THRUST BLOCKS.
 - PRESSURE TEST AND DISINFECTION OF WATER MAIN SHOULD BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - ACCEPTANCE TESTS OF SANITARY SEWER MAIN SHOULD BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - THE WATER SERVICE FOR THIS PROJECT WILL REQUIRE A CONCRETE VAULT. PLEASE CONTACT CLEAR FLOW AT (540)942-3300 TO ORDER THE VAULT. THE APPLICANT IS RESPONSIBLE FOR PAYMENT, COORDINATION OF THE VAULT DELIVERY, AND INSTALLATION OF THE WATER SERVICE THE AUTHORITY MAIN AND THE VAULT. CONTACT THE AUTHORITY INSPECTOR AT 537-3243 PRIOR TO CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR ALL ASPECTS AND COMPONENTS OF THE METER SERVICE AND VAULT IN ACCORDANCE WITH AUTHORITY STANDARDS, INCLUDING BUT NOT LIMITED TO PAVEMENT RESTORATION, THE TAPPING SLEEVE, VALVE AND APPURTENANCES. CONTRACTOR TO EXCAVATE AND INSTALL TAPPING SLEEVE AND VALVE. THE WET TAP WILL BE MADE BY THE AUTHORITY UPON PAYMENT AND SCHEDULING.
 - CONTRACTOR TO PROVIDE CALCULATIONS AND DETAILS SEALED BY A REGISTERED ENGINEER IN THE STATE OF VIRGINIA FOR LIGHT POLE BASE/FOUNDATION.
 - FOR SEWER LATERAL CONNECTION, CONTRACTOR SHALL CORE DRILL THE MANHOLE AND PROVIDE A RUBBER BOOT. CONTRACTOR SHALL CONTACT WVA INSPECTOR AT (540) 537-2460 PRIOR TO DRILLING.

Notes: 1. 2011 Project: VDOT/VAHRA/V107 C2.1 UTILITY PLAN.dwg Date: 08 Feb. 2012 11:00

WATER COORDINATE LIST			WATER COORDINATE LIST		
POINT #	NORTHING	DESCRIPTION	POINT #	NORTHING	DESCRIPTION
2001	N.347512.62 E.2807264.09	CONNECT TO EX. 8"	2010	N.347593.37 E.2807051.27	22½ VERT.BEND
2002	N.347526.69 E.2807256.47	22½ VERT.BEND	2011	N.347582.11 E.2807030.47	TEE
2003	N.347530.21 E.2807254.57	22½ VERT.BEND	2012	N.347576.31 E.2807019.75	45° HORIZ.BEND
2004	N.347623.27 E.2807204.16	GRADE BREAK	2013	N.347561.86 E.2807015.46	45° HORIZ.BEND
2005	N.347658.91 E.2807184.86	45° HORIZ.BEND	2014	N.347649.05 E.2807173.14	F.H. ASSEMBLY
2006	N.347661.32 E.2807176.73	45° HORIZ.BEND	2015	N.347590.95 E.2807025.68	F.H. ASSEMBLY
2007	N.347657.05 E.2807168.84	TEE	2016	N.347576.30 E.2807011.24	45° HORIZ.BEND
2008	N.347649.35 E.2807154.61	GRADE BREAK	2017	N.347618.81 E.2807023.68	F.H. ASSEMBLY
2009	N.347606.46 E.2807075.43	GRADE BREAK			

SANITARY SEWER SCHEDULE				
STRUCTURE	COORDINATE	TOP ELEV	LOWEST INVERT	
A (EXISTING)	N. 347582.26 E. 2806839.73	1094.75	1086.50	
B	N. 347587.00 E. 2806848.54	1095.53	1086.60	
C	N. 347617.76 E. 2806897.28	1098.29	1087.18	
D	N. 347657.84 E. 2806960.45	1102.27	1094.64	
E	N. 347581.05 E. 2807054.93	1102.21	1097.07	
F	N. 347615.42 E. 2807118.38	1102.78	1098.52	
G	N. 347594.17 E. 2807129.89	---	1099.00	



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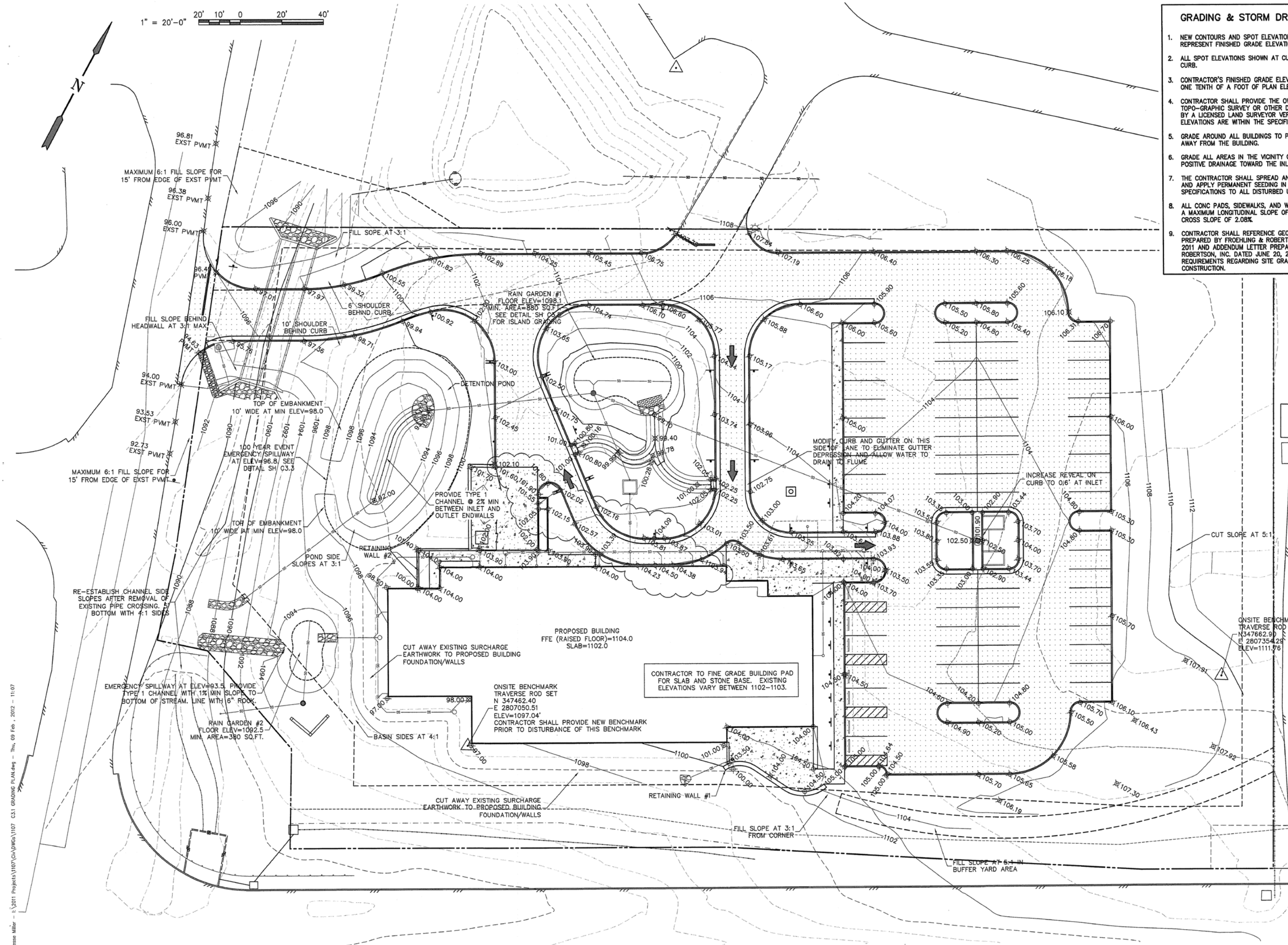
UTILITY PLAN

C2.1

216/241-1100
1382 West Ninth Street
Suite 400
Cleveland, Ohio 44113
www.HBMArchitects.com



APPROVED



- ## GRADING & STORM DRAINAGE NOTES
1. NEW CONTOURS AND SPOT ELEVATIONS SHOWN ON THE PLANS REPRESENT FINISHED GRADE ELEVATIONS.
 2. ALL SPOT ELEVATIONS SHOWN AT CURBS REFER TO THE TOP OF CURBS.
 3. CONTRACTOR'S FINISHED GRADE ELEVATIONS SHALL BE WITHIN ONE TENTH OF A FOOT OF PLAN ELEVATIONS.
 4. CONTRACTOR SHALL PROVIDE THE OWNER WITH A TOPO-GRAPHIC SURVEY OR OTHER DOCUMENTATION CERTIFIED BY A LICENSED LAND SURVEYOR VERIFYING THE FINISHED GRADE ELEVATIONS ARE WITHIN THE SPECIFIED TOLERANCE.
 5. GRADE AROUND ALL BUILDINGS TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
 6. GRADE ALL AREAS IN THE VICINITY OF DROP INLETS TO PROVIDE POSITIVE DRAINAGE TOWARD THE INLET.
 7. THE CONTRACTOR SHALL SPREAD AND FINE GRADE TOPSOIL, AND APPLY PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS TO ALL DISTURBED UNPAVED AREAS.
 8. ALL CONC PADS, SIDEWALKS, AND WALKING TRAILS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.08%.
 9. CONTRACTOR SHALL REFERENCE GEOTECHNICAL INVESTIGATION PREPARED BY FROELICH & ROBERTSON, INC. DATED JUNE 3, 2011 AND ADDENDUM LETTER PREPARED BY FROELICH & ROBERTSON, INC. DATED JUNE 20, 2011 FOR SPECIFIC PROJECT REQUIREMENTS REGARDING SITE GRADING AND FOUNDATION CONSTRUCTION.



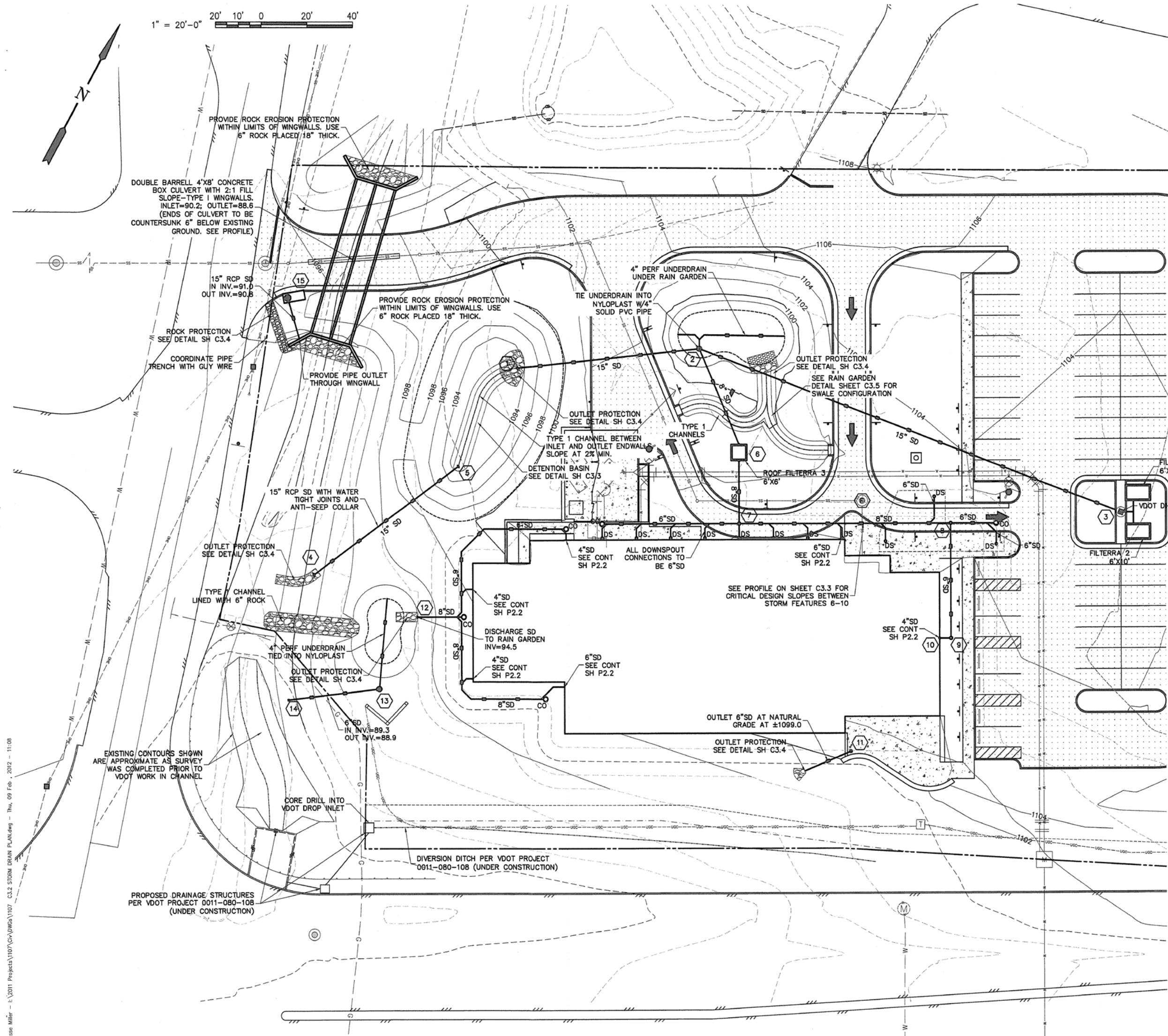
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GLENVAR BRANCH LIBRARY
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GRADING PLAN

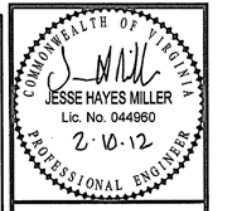
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- STORM DRAINAGE NOTES**
- CONTRACTOR SHALL PROVIDE THE OWNER WITH AN AS-BUILT SURVEY CERTIFIED BY A LICENSED LAND SURVEYOR VERIFYING THE LOCATION AND ELEVATIONS OF THE STORM DRAIN SYSTEM.
 - GRADE ALL AREAS IN THE VICINITY OF DROP INLETS TO PROVIDE POSITIVE DRAINAGE TOWARD THE INLET.
 - MANHOLE TYPE STRUCTURES SHALL BE CONSTRUCTED AS SHOWN ON THE DETAIL, SHEET C2.4.
 - CLEANOUTS SHALL BE CONSTRUCTED AS SHOWN ON THE DETAILS, SHEET C2.2 AND C2.4.
 - PROVIDE INLET SHAPING AT ALL NEW MANHOLES AND CATCH BASINS IN ACCORDANCE WITH DETAIL, SHEET C3.3.
 - ALL ROOF AND DOWNSPOUT DRAIN LINES SHALL BE 6" DIAMETER (UNLESS OTHERWISE NOTED) AND SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 2.00% (UNLESS OTHERWISE NOTED) AND WITH A MINIMUM COVER OF 2 FEET.
 - SEE DOWNSPOUT CONNECTION DETAIL, SHEET C3.3.
 - DETENTION & RAIN GARDEN FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL PROJECT COMPLETION. LONG TERM MAINTENANCE OF THE DETENTION FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER. THESE AREAS AND ACCESS TO THEM FOR MAINTENANCE SHALL BE MEMORIALIZED AT THE ROANOKE COUNTY COURTHOUSE.

STORM DRAIN SCHEDULE				
STRUCTURE	TYPE	COORDINATE	TOP ELEV	LOWEST INVERT
1	VDOT EW-1	N. 347594.44 E. 2806958.38	---	1093.00
2	NYLOPLAST (W/GRATE) : 24 IN.	N. 347639.72 E. 2807024.41	1099.10	1093.50
3	VDOT DI-1	N. 347664.47 E. 2807220.51	1102.01	1097.00
4	VDOT EW-1	N. 347472.88 E. 2806922.70	---	1091.00
5	VDOT EW-1	N. 347544.56 E. 2806955.80	---	1092.00
6	ROOF FILTERRA (SEE SH C3.4)	---	1101.20	---
7	CLEANOUT	N. 347586.54 E. 2807086.05	1103.30	1099.80
8	TEE	N. 347625.04 E. 2807157.14	---	1100.20
9	CLEANOUT	N. 347581.07 E. 2807180.98	1104.30	1100.90
10	BUILDING CONNECTION	N. 347578.89 E. 2807176.58	---	1101.10
11	NYLOPLAST (W/GRATE) : 12 IN.	N. 347517.07 E. 2807165.64	1103.50	1100.00
12	VDOT EW-1	N. 347478.28 E. 2806971.18	---	1094.50
13	NYLOPLAST (W/SOLID COVER) : 24 IN.	N. 347442.98 E. 2806971.24	1095.00	1090.50
14	VDOT EW-12	N. 347419.86 E. 2806938.60	---	1089.30
15	VDOT DI-3B : L= 6 FT.	N. 347573.67 E. 2806855.45	1095.76	1091.00



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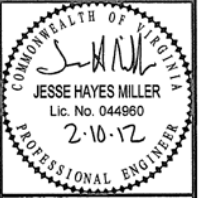
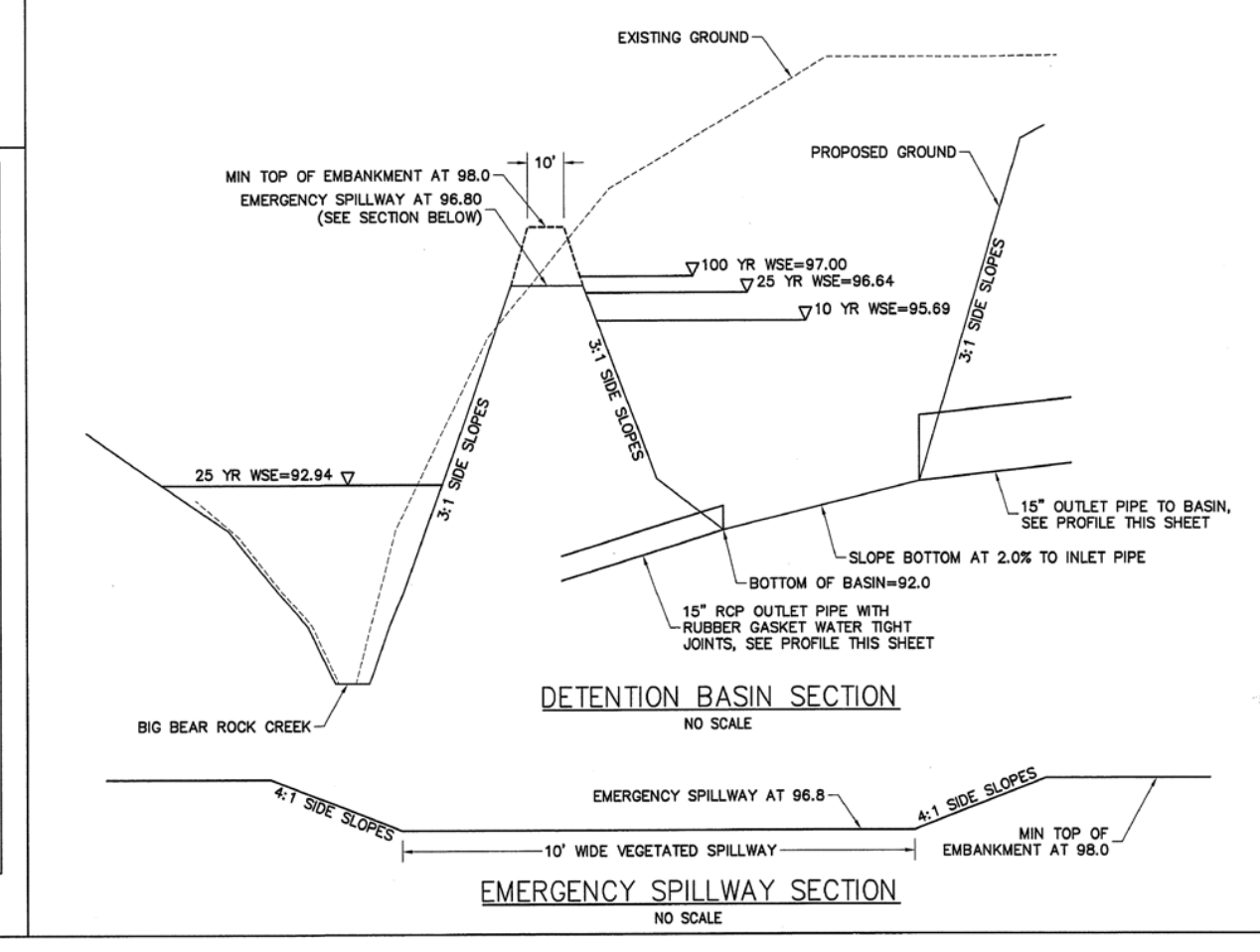
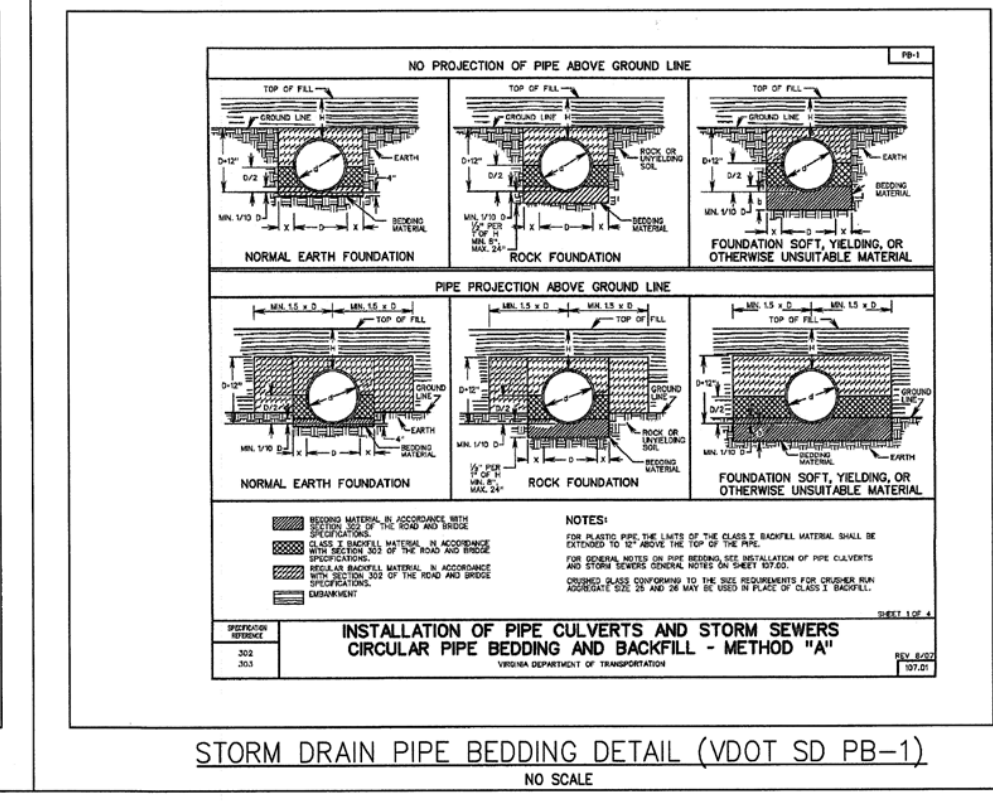
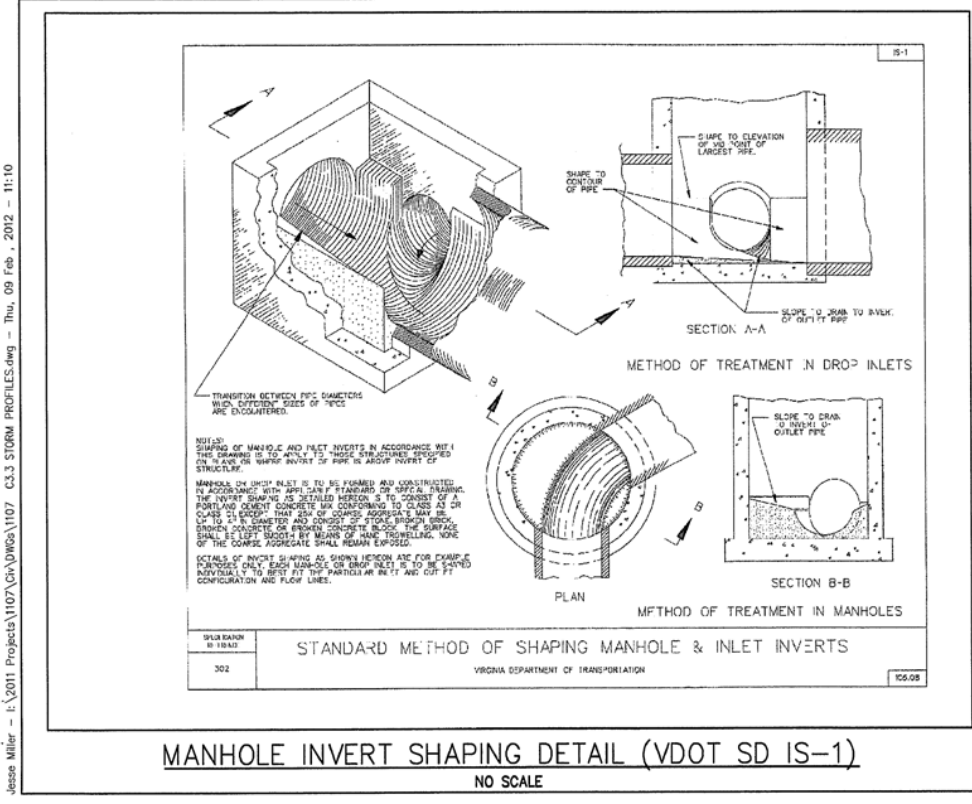
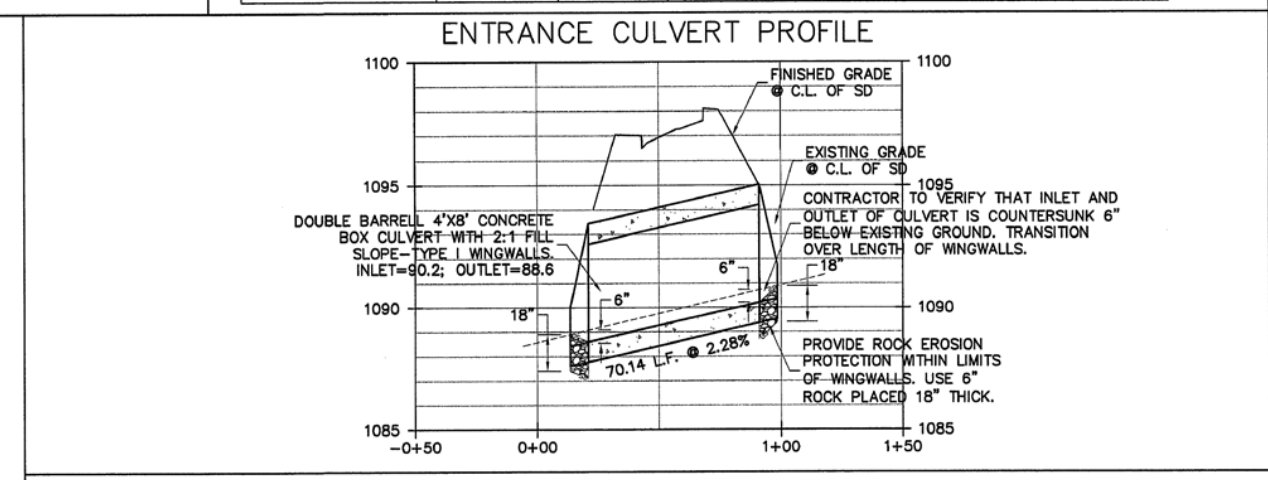
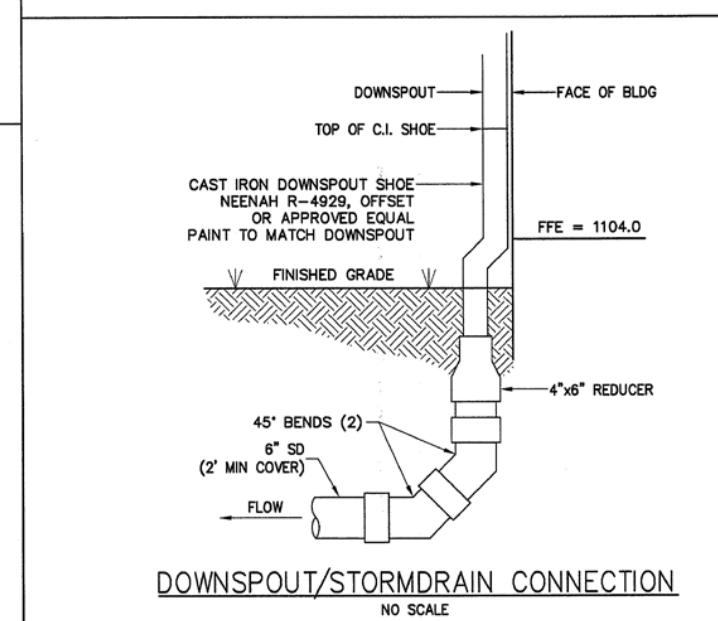
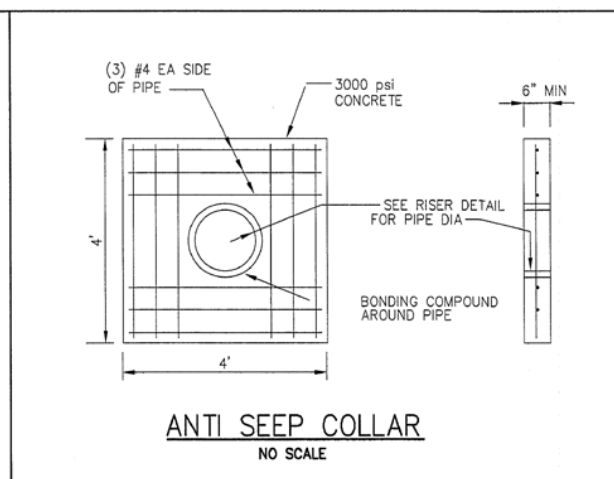
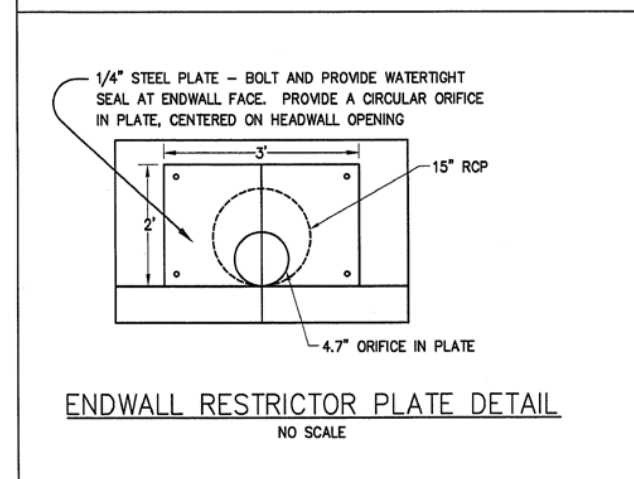
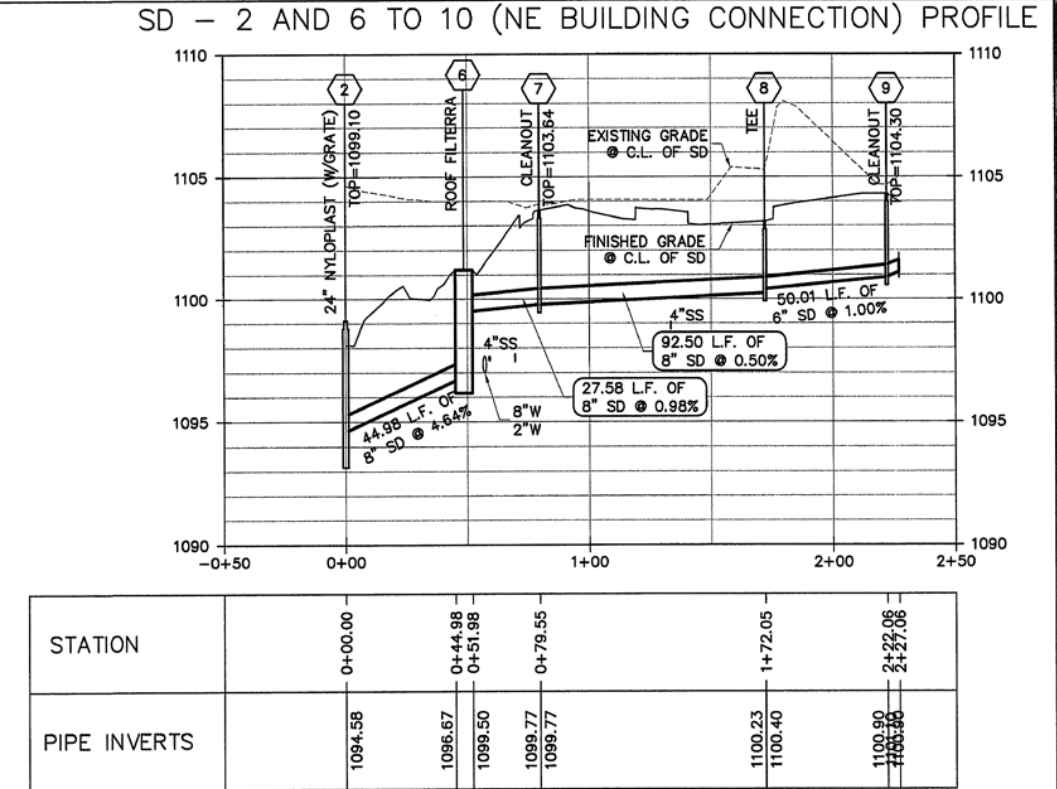
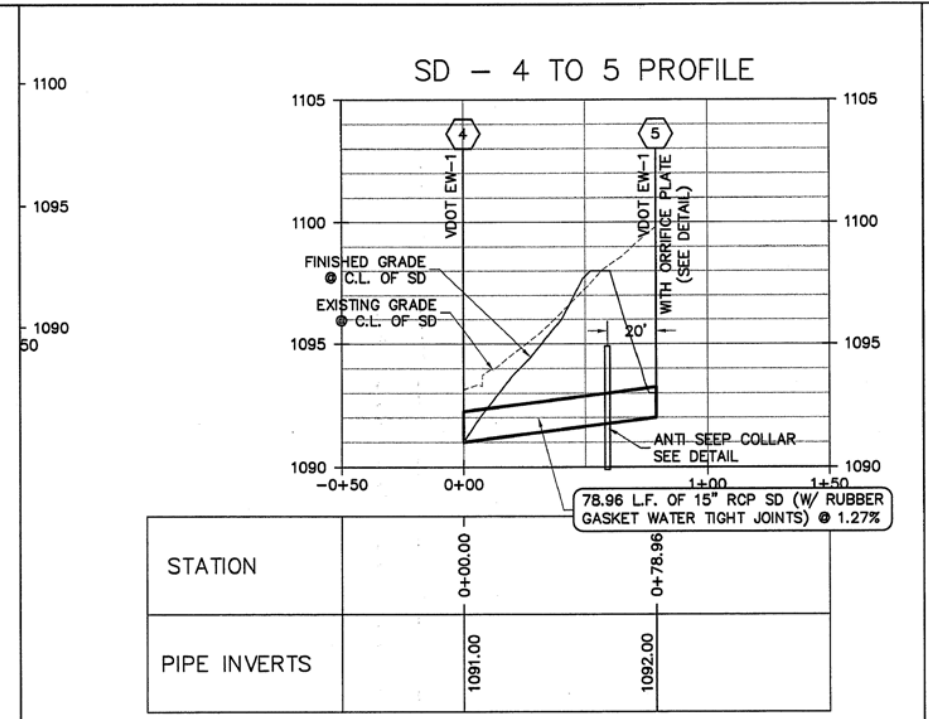
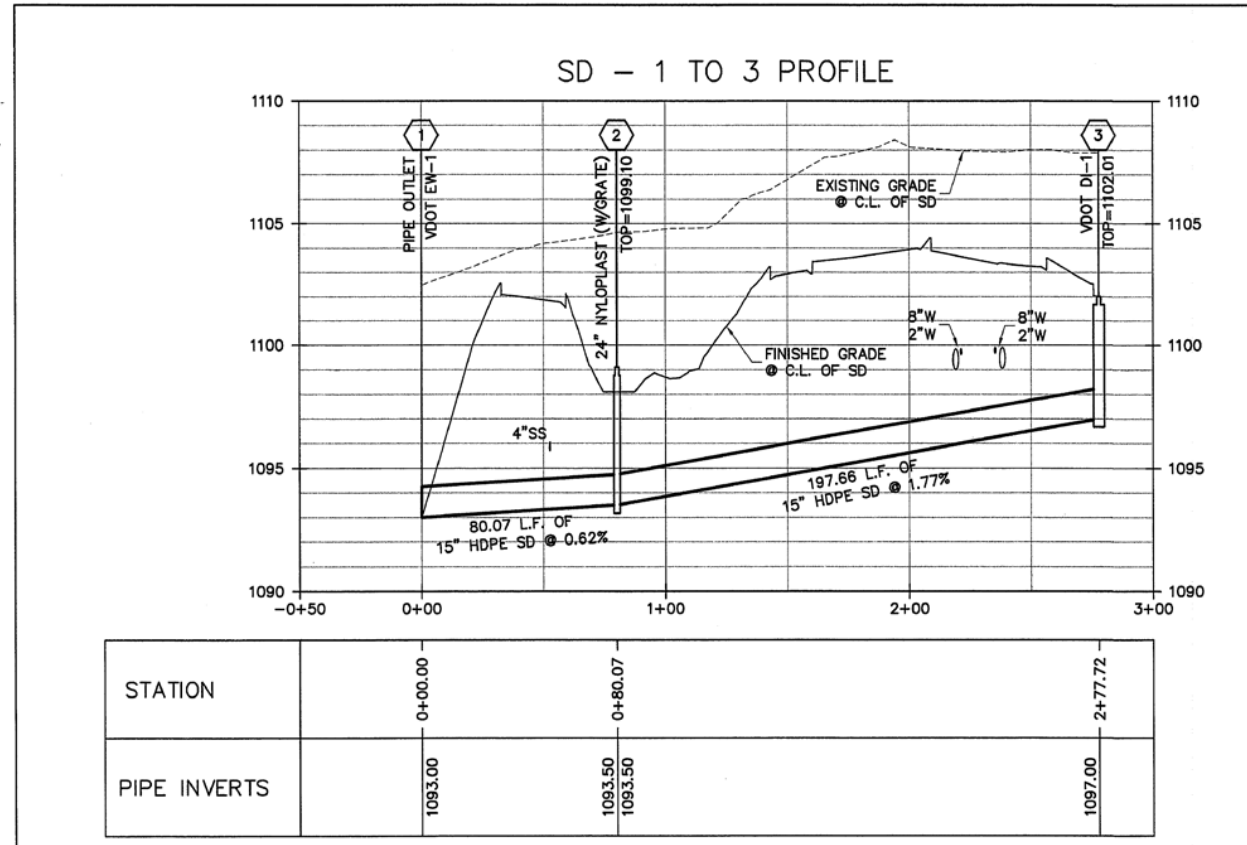
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Jesse Miller - E. 2011 Projects\1107\CA\DWG\C3.2 STORM DRAIN PLAN.dwg - Thu, 09 Feb, 2012 - 11:08



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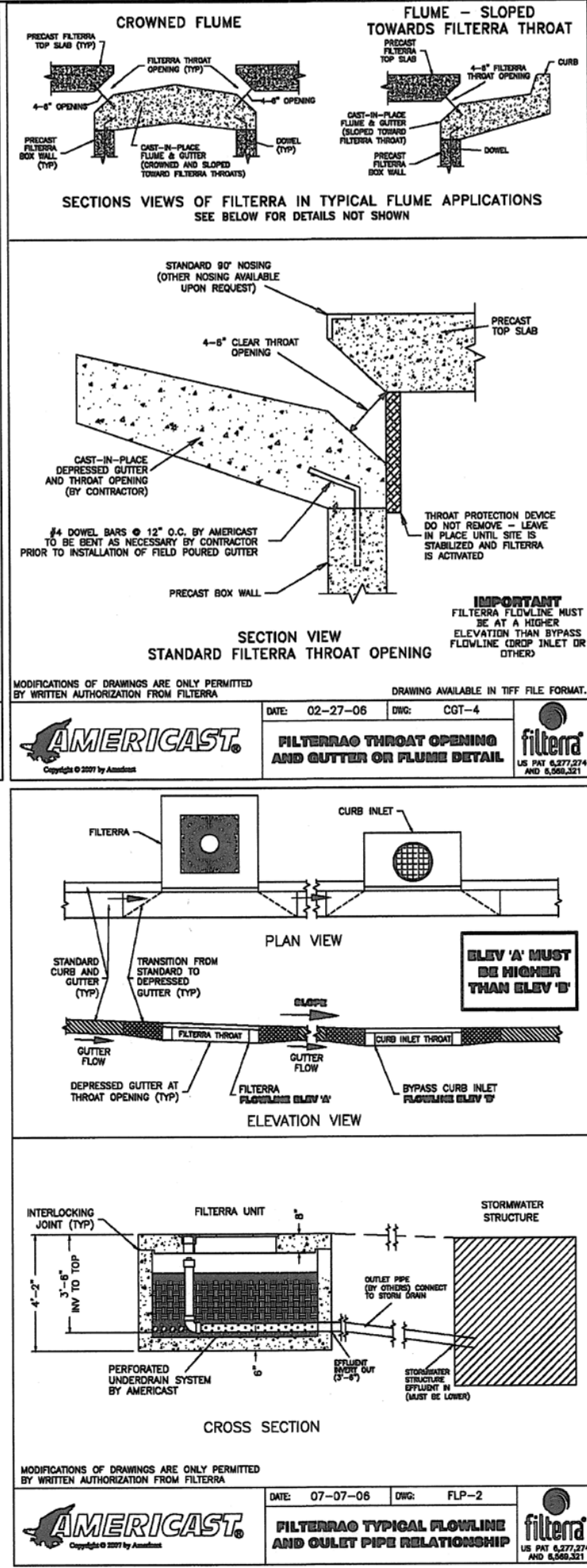
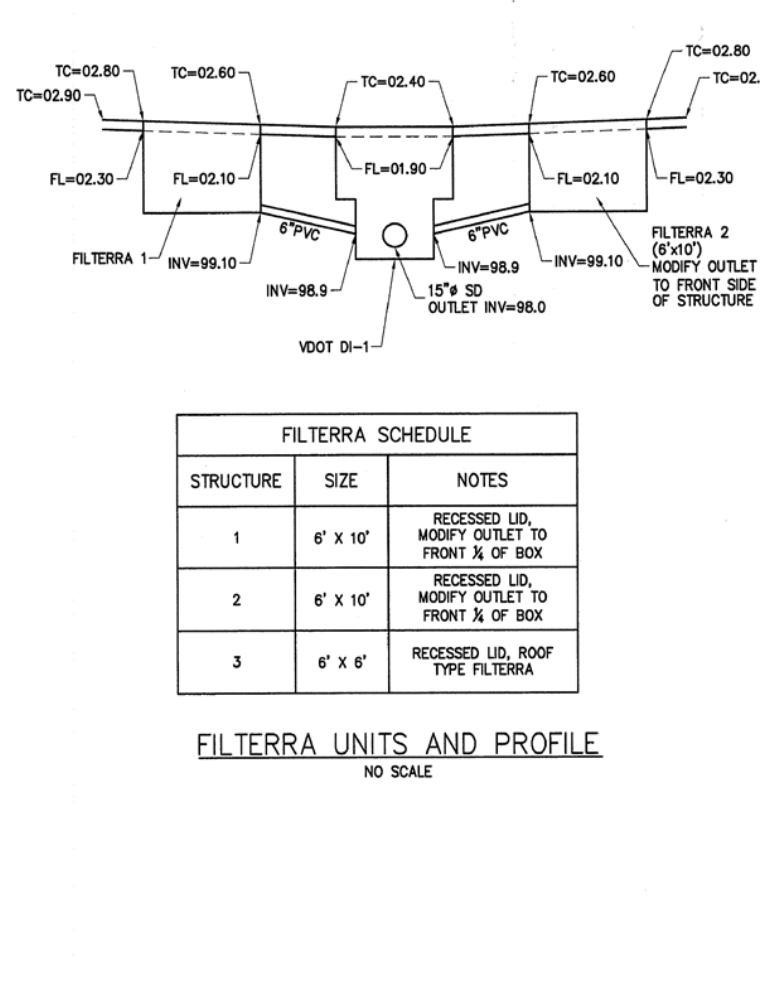
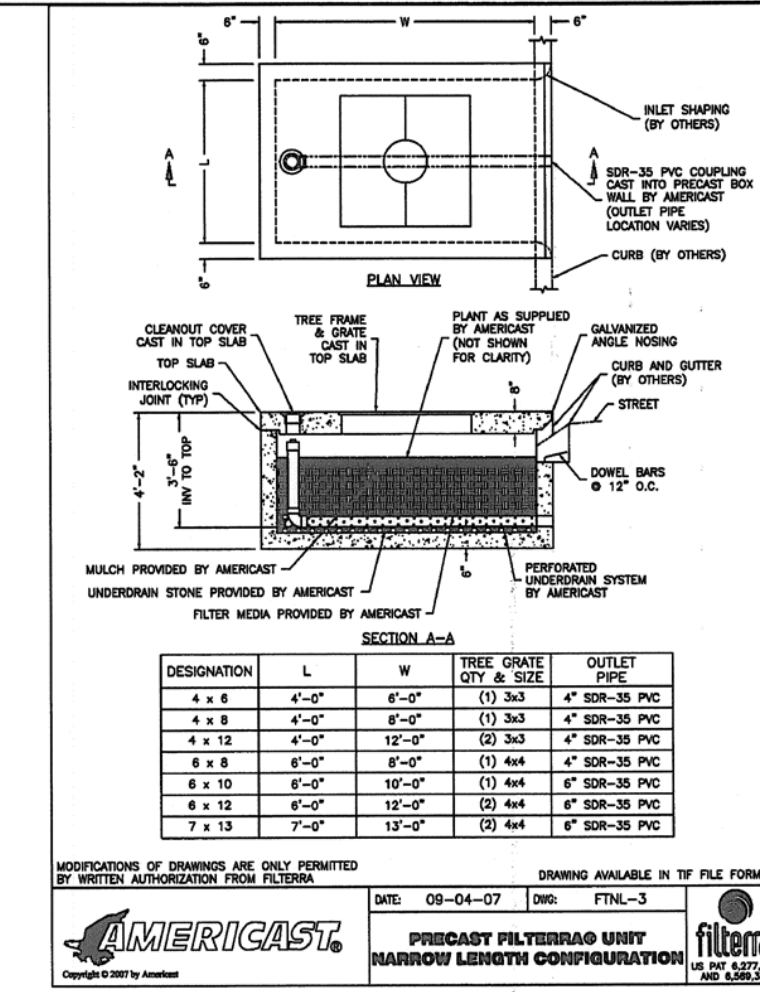
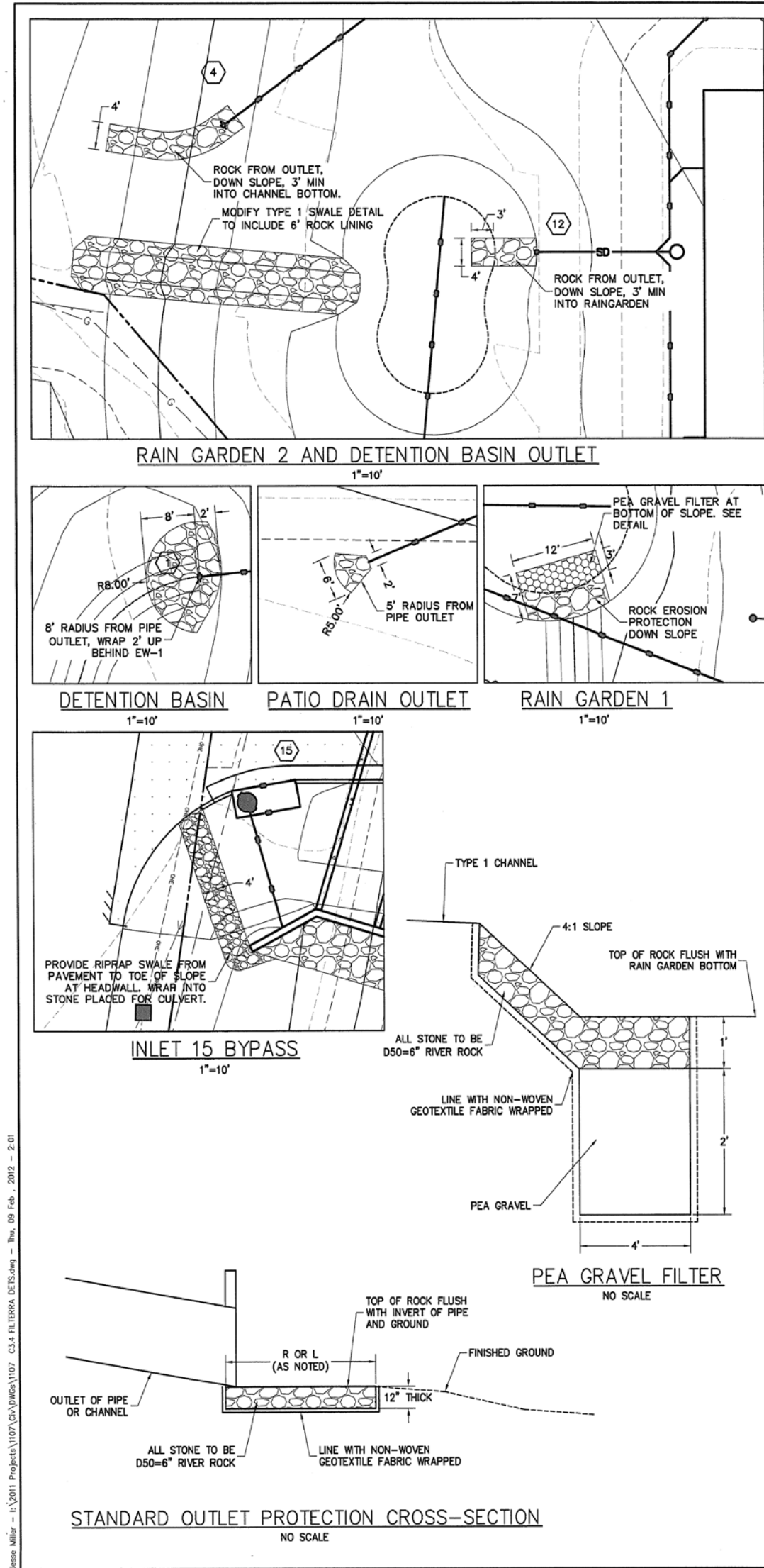
STORM DRAIN
PROFILES &
DETAILS

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FILTERRA STANDARD PLAN NOTES

CONSTRUCTION & INSTALLATION

A. EACH UNIT SHALL BE CONSTRUCTED AT THE LOCATIONS AND ELEVATIONS ACCORDING TO THE SIZES SHOWN ON THE APPROVED DRAWINGS. ANY MODIFICATIONS TO THE ELEVATION OR LOCATION SHALL BE AT THE DIRECTION AND APPROVAL OF THE ENGINEER.

B. IF THE FILTERRA IS STORED BEFORE INSTALLATION, THE TOP SLAB MUST BE PLACED ON THE BOX USING THE 2X4 WOOD PROVIDED, TO PREVENT ANY CONTAMINATION FROM THE SITE. ALL INTERNAL FITTINGS SUPPLIED (IF ANY), MUST BE LEFT IN PLACE AS PER THE DELIVERY.

C. THE UNIT SHALL BE PLACED ON A COMPACTED SUB-GRADE WITH A MINIMUM 6-INCH GRAVEL BASE MATCHING THE FINAL GRADE OF THE CURB LINE IN THE AREA OF THE UNIT. THE UNIT SHALL BE PLACED SUCH THAT THE UNIT AND TOP SLAB MATCH THE GRADE OF THE CURB IN THE AREA OF THE UNIT. COMPACT UNDISTURBED SUB-GRADE MATERIALS TO 95% OF MAXIMUM DENSITY AT +1-2% OF OPTIMUM MOISTURE. UNSUITABLE MATERIAL BELOW SUB-GRADE SHALL BE REPLACED TO THE SITE ENGINEER'S APPROVAL.

D. OUTLET CONNECTIONS SHALL BE ALIGNED AND SEALED TO MEET THE APPROVED DRAWINGS WITH MODIFICATIONS NECESSARY TO MEET SITE CONDITIONS AND LOCAL REGULATIONS.

E. ONCE THE UNIT IS SET, THE INTERNAL WOODEN FORMS AND PROTECTIVE MESH COVER MUST BE LEFT INTACT. REMOVE ONLY THE TEMPORARY WOODEN SHIPPING BLOCKS BETWEEN THE BOX AND TOP SLAB. THE TOP LID SHOULD BE SEALED ONTO THE BOX SECTION BEFORE BACKFILLING, USING A NONSHRINK GROUT, BUTY, RUBBER OR SIMILAR WATERPROOF SEAL. THE BOARDS ON TOP OF THE LID AND BOARDS SEaled IN THE THROAT MUST NOT BE REMOVED. THE SUPPLIER (AMERICAST OR ITS AUTHORIZED DEALER) WILL REMOVE THESE SECTIONS AT THE TIME OF ACTIVATION. BACKFILLING SHOULD BE PERFORMED IN A CAREFUL MANNER, BRINGING THE APPROPRIATE FILL MATERIAL UP IN 6" LIFTS ON ALL SIDES. PRECAST SECTIONS SHALL BE SET IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT. IN ALL INSTANCES, INSTALLATION OF FILTERRA UNIT SHALL CONFORM TO ASTM SPECIFICATION C891 STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES, UNLESS DIRECTED OTHERWISE IN CONTRACT DOCUMENTS.

F. CURB AND GUTTER CONSTRUCTION (WHERE PRESENT) SHALL ENSURE THAT THE FLOW-LINE OF THE FILTERRA UNIT IS AT A GREATER ELEVATION THAN THE FLOW-LINE OF THE BYPASS STRUCTURE OR RELIEF (DROP INLET, CURB CUT OR SIMILAR). FAILURE TO COMPLY WITH THIS GUIDELINE MAY CAUSE FAILURE AND/OR DAMAGE TO THE FILTERRA-ENVIRONMENTAL DEVICE.

G. EACH FILTERRA UNIT MUST RECEIVE ADEQUATE IRRIGATION TO ENSURE SURVIVAL OF THE LIVING SYSTEM DURING PERIODS OF DRIER WEATHER. THIS MAY BE ACHIEVED THROUGH GUTTER FLOW OR THROUGH THE TREE GRATE.

ACTIVATION

A. ACTIVATION OF THE FILTERRA UNIT IS PERFORMED ONLY BY THE SUPPLIER. PURCHASER IS RESPONSIBLE FOR FILTERRA UNIT PROTECTION AND SUBSEQUENT CLEAN OUT COST. THIS PROCESS CANNOT COMMENCE UNTIL THE PROJECT SITE IS FULLY STABILIZED AND CLEANED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED), NEGATING THE CHANCE OF CONSTRUCTION MATERIALS CONTAMINATING THE FILTERRA SYSTEM. CARE SHALL BE TAKEN DURING CONSTRUCTION NOT TO DAMAGE THE PROTECTIVE THROAT AND TOP PLATES.

B. ACTIVATION INCLUDES INSTALLATION OF PLANT(S) AND MULCH LAYERS AS NECESSARY.

MAINTENANCE

A. EACH CORRECTLY INSTALLED FILTERRA UNIT IS TO BE MAINTAINED BY THE SUPPLIER, OR A SUPPLIER APPROVED CONTRACTOR FOR A MINIMUM PERIOD OF 1 YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE PRICE OF EACH FILTERRA UNIT. EXTENDED MAINTENANCE CONTRACTS ARE AVAILABLE AT EXTRA COST UPON REQUEST.

B. ANNUAL MAINTENANCE CONSISTS OF A MAXIMUM OF (2) SCHEDULED VISITS. THE VISITS ARE SCHEDULED SEASONALLY; THE SPRING VISIT AIMS TO CLEAN UP AFTER WINTER LOADS INCLUDING SALTS AND SANDS. THE FALL VISIT HELPS THE SYSTEM BY REMOVING EXCESSIVE LEAF LITTER.

C. EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING TASKS:

1. FILTERRA UNIT INSPECTION
2. FOREIGN DEBRIS, SILT, MULCH & TRASH REMOVAL
3. FILTER MEDIA EVALUATION AND RECHARGE AS NECESSARY
4. PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY
5. REPLACEMENT OF MULCH
6. DISPOSAL OF ALL MAINTENANCE REFUSE ITEMS
7. MAINTENANCE RECORDS UPDATED AND STORED (REPORTS AVAILABLE UPON REQUEST)

D. THE BEGINNING AND ENDING DATE OF SUPPLIER'S OBLIGATION TO MAINTAIN THE INSTALLED SYSTEM SHALL BE DETERMINED BY THE SUPPLIER AT THE TIME THE SYSTEM IS ACTIVATED. OWNERS MUST PROMPTLY NOTIFY THE SUPPLIER OF ANY DAMAGE TO THE PLANT(S), WHICH CONSTITUTE(S) AN INTEGRAL PART OF THE BIORETENTION TECHNOLOGY.

COMMONWEALTH OF VIRGINIA
JESSE HAYES MILLER
LIC. NO. 044960
2-16-12
PROFESSIONAL ENGINEER

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DETAILS AND
OUTLET
PROTECTION

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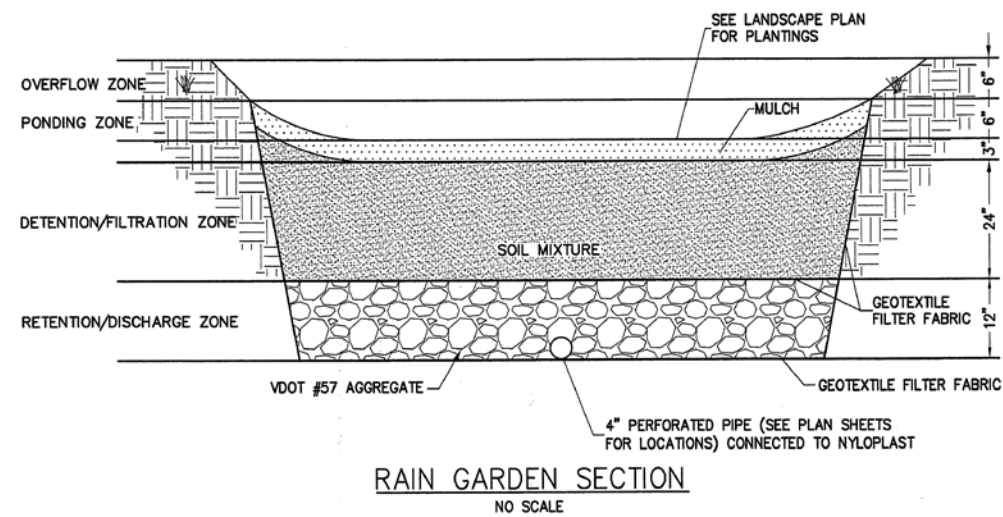
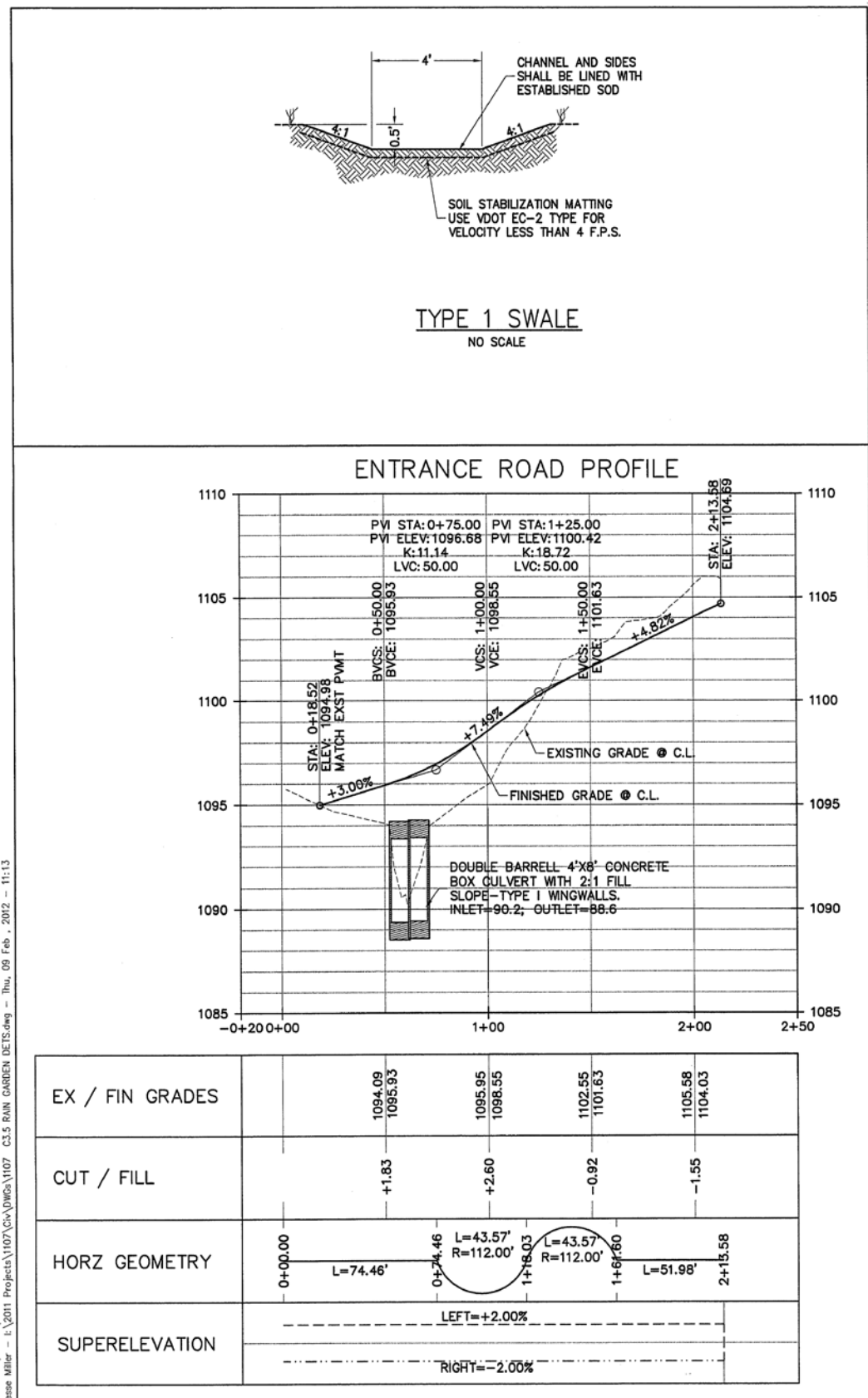
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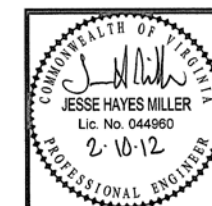
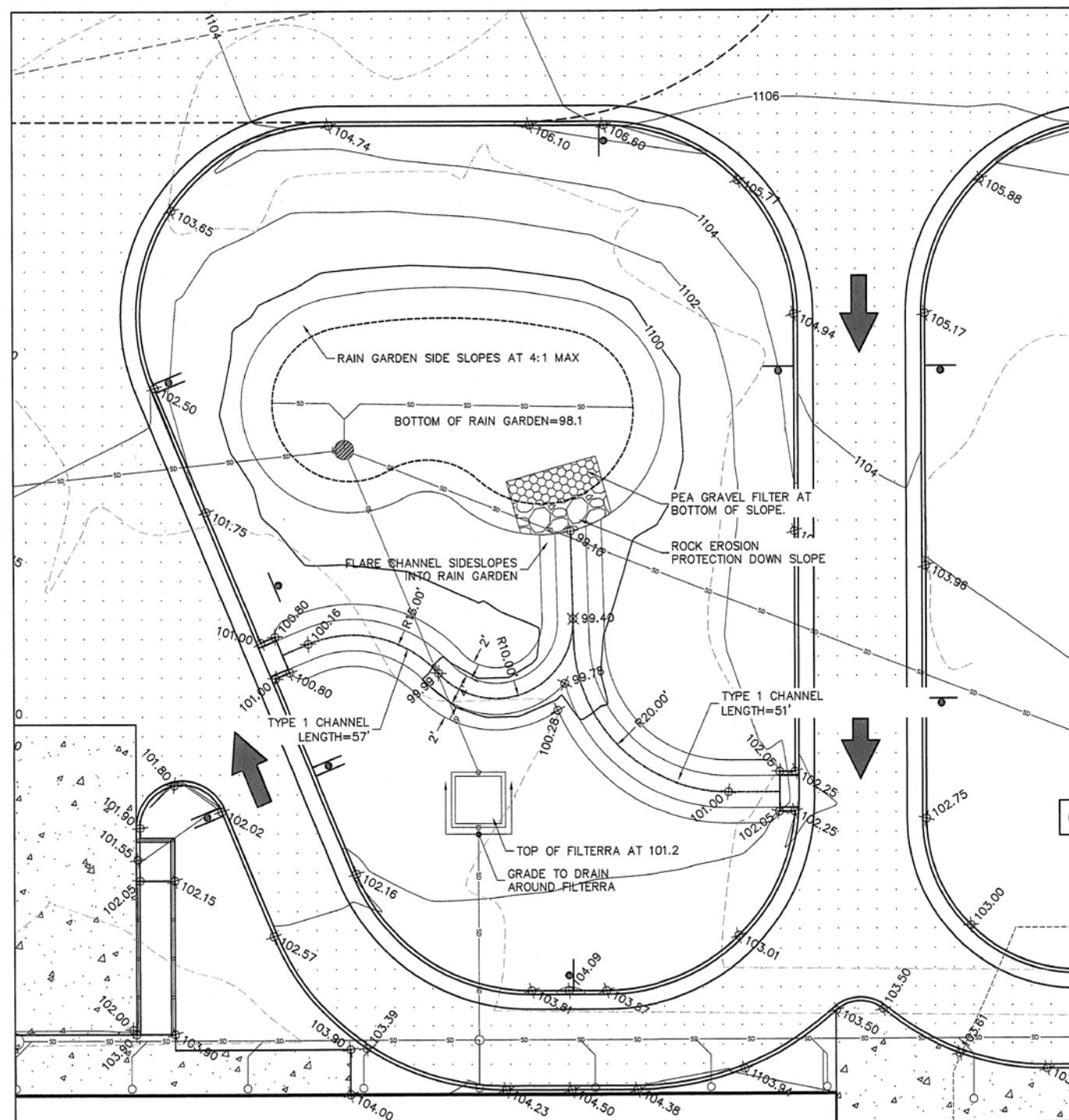
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RAIN GARDEN SOIL MIX REQUIREMENTS:

- A. SOIL MIX: TOPSOIL FOR BIORETENTION SHALL HAVE A SANDY LOAM, LOAMY SAND, OR LOAM TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT IS <3%; SOIL MIXTURE SHALL BE 50-60% SAND; 20-30% LEAF COMPOST; AND 20-30% TOPSOIL. THE SOIL SHALL BE A UNIFORM MIX FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, TEARHUB, OR OTHER NOXIOUS WEEDS.
- * LEAF COMPOST IS ESSENTIALLY COMPOSED OF AGED LEAF MULCH AND PROVIDES ADDED ORGANIC MATTER TO IMPROVE THE HEALTH OF THE SOIL AND ENSURE ADEQUATE SOIL STRUCTURE.
- B. SAND: PROVIDE CLEAN SAND, FREE OF DELETERIOUS MATERIALS. SAND SHALL MEET AASHTO M-6 OR ASTM C 33 WITH GRAIN SIZE OF 0.021 μ m-0.041 μ m.
- C. GRAVEL FILTER: UNDERDRAIN GRAVEL BLANKET SHALL BE DOUBLE WASHED, #57 STONE, 1-1/2" IN SIZE. PEA GRAVEL SHALL BE WASHED, RIVER RUN, ROUND DIAMETER, 1/4 - 3/4" IN SIZE.



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GRADING &
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